User Guide

TouchLink™

TLP 1000MV and TLP 1000TV

TouchLink Touchpanels

Extron® Electronics

INTERFACING, SWITCHING AND CONTROL

68-1909-01 **Rev. B**
01 12

Safety Instructions • English

This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the instructions of the manufacturer.

Consignes de Sécurité • Français

Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).

Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions• Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions• Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Avertissement

Alimentations • Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation• Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'il y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un type equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Sicherheitsanleitungen • Deutsch

Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Instrucciones de seguridad • Español

Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.

Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalientamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

安全须知 • 中文

这个符号提示用户该设备用户手册中有重要的操作和维护说明。

这个符号警告用户该设备机壳内有暴露的危险电压，有触电危险。

注意

阅读说明书 • 用户使用该设备前必须阅读并理解所有安全和使用说明。

保存说明书 • 用 户应保存安全说明书以备将来使用。

遵守警告 • 用户应遵守产品和用户指南上的所有安全和操作说明。

避免追加 • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

警告

电源 • 该设备只能使用产品上标明的电源。 设备必须使用有地线的供电系统供电。 第三条线（地线）是安全设施，不能不用或跳过 。

拔掉电源 • 为安全地从设备拔掉电源，请拔掉所有设备后或桌面电源的电源线，或任何接到市电系统的电源线。

电源线保护 • 妥善布线， 避免被踩踏，或重物挤压。

维护 • 所有维修必须由认证的维修人员进行。 设备内部没有用户可以更换的零件。为避免出现触电危险不要自己试图打开设备盖子维修该设备。

通风孔 • 有些设备机壳上有通风槽或孔，它们是用来防止机内敏感元件过热。 不要用任何东西挡住通风孔。

锂电池 • 不正确的更换电池会有爆炸的危险。必须使用与厂家推荐的相同或相近型号的电池。按照生产厂的建议处理废弃电池。

FCC Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

The Class A limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the user guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

NOTE: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance with FCC emissions limits.

For more information on safety guidelines, regulatory compliances, EMI/EMF compliance, accessibility, and related topics, **click here**.

Conventions Used in this Guide

In this user guide, the following are used:

CAUTION: A caution indicates a potential hazard to equipment or data.

NOTE: A note draws attention to important information.

TIP: A tip provides a suggestion to make working with the application easier.

WARNING: A warning warns of things or actions that might cause injury, death, or other severe consequences.

Commands are written in the fonts shown here:

```
^AR Merge Scene,,Op1 scene 1,1 ^B 51 ^W^C
[Ø1] R ØØØ4 ØØ3ØØ ØØ4ØØ ØØ8ØØ ØØ6ØØ [Ø2] 35 [17] [Ø3]
Esc X1 * X17 * X20 * X23 * X21 CE ←
```

NOTE: For commands and examples of computer or device responses mentioned in this guide, the character "Ø" is used for the number zero and "O" represents the capital letter "o."

Computer responses and **directory paths** that do not have variables are written in the font shown here:

```
Reply from 2Ø8.132.18Ø.48: bytes=32 times=2ms TTL=32
C:\Program Files\Extron
```

Variables are written in slanted form as shown here:

```
ping xxx.xxx.xxx.xxx –t
SOH R Data STX Command ETB ETX
```

Selectable items, such as menu names, menu options, buttons, tabs, and field names are written in the font shown here:

From the **File** menu, select **New**.

Click the **OK** button.

Copyright
© 2012 Extron Electronics. All rights reserved.

Trademarks
All trademarks mentioned in this guide are the properties of their respective owners

Contents

Introduction 1
- About the TLP 1000MV and TLP 1000TV 1
- Features 1
- Requirements 3
  - Computer Software and Hardware 3
  - Other Hardware 3

Panel Features 4
- TLP 1000MV Front and Top Panel Features and Operations 4
  - Reset Buttons and LED 5
- TLP 1000MV Rear Panel Features and Connections 6
- TLP 1000TV Front Panel Features and Operations 9
- TLP 1000TV Rear Panel Features and Connections 10

Initial Calibration 14
- How to Access the Internal On-screen Menus 14
- Main Screen 14
- Volume Screen 15
- Time Screen 16
- Network Screen 16
- Video Screen 17
- Touch Calibration Screen 17

Configuration Software 18
- The Configuration Software 18
- Installing the Software 18
  - GUI Configurator and Global Configurator Installation 18
- Using the TouchLink Panel Web Pages 19
- Updating the Firmware 21
  - Updating Firmware Using Extron Firmware Loader 21
  - Updating Firmware Using GUI Configurator 22
  - Updating Firmware From a Web Browser 23
- Using GUI Configurator 24
- Using Global Configurator 29

Specifications 34

Accessories and Part Numbers 40
- Included Parts 40
- Optional Parts 40

Mounting 41
- Rack Mounting the TLP 1000MV 41
  - Underwriters Laboratories Guidelines for Rack Mounting 41
  - Rack Mounting the TLP 1000MV 41
- Wall Mounting the TLP 1000MV 42
- Furniture Mounting the TLP 1000MV 43
- Wall Mounting the TLP 1000MV with a Wall Box 44
- Desktop Mounting the TLP 1000TV 44
  - Freestanding 44
  - Swivel Mount Adapter 44
- Removing the TLP 1000TV Base for VESA Mounting 45
- VESA Mounting the TLP 1000TV 46

Reset Modes 47

Introduction

This guide describes the function, installation and operation of the TouchLink™ TLP 1000MV and TLP 1000TV panels. Unless otherwise stated, the terms "TLP 1000 Series," "TLP 1000," "touchpanel," and "TouchLink panel" refer to both models. The guide also provides information about optional accessories that are available from Extron for both panels.

This section provides information:

- **About the TLP 1000MV and TLP 1000TV**
- **Features of the TLP 1000MV and TLP 1000TV**
- **Computer Software and Hardware Requirements**
- **Other Hardware Requirements**

About the TLP 1000MV and TLP 1000TV

Both units have a 10.1 inch widescreen display with a resolution of 1024x600. The screen displays graphic objects and text, which are associated with user-defined functions. The touch overlay allows the user to initiate or activate functions by touching the objects on the screen.

The screen layout is designed with the Extron GUI Configurator software. Functions are assigned to the screen objects with the Extron Global Configurator software. The user can define the graphics and the functions associated with those graphics, providing versatility and adaptability to the configuration and control of an AV system.

A motion sensor, light sensor, and two speakers provide sleep mode, auto dimming, and audible feedback.

The TLP 1000MV is intended to be wall or rack mounted.

The TLP 1000TV comes with a stand that allows it to be placed on a desktop. If the stand is removed, the unit can be mounted on a wall or furniture, using the Extron LPVM-1 VESA® mount kit (part number **60-1099-02**).

Features

10.1-inch LCD screen — displays a range of graphic objects and text on a 1024x600 pixel screen.

Touch screen overlay — provides simple and intuitive control over a range of functions by touching the icons displayed on the screen.

Video preview — allows video preview with an MTP input.

GUI Configurator and Global Configurator Software — allows the user to design a custom graphical user interface and associate a range of different functions with objects in that display. No programming knowledge is needed.

Easy configuration and flexibility — on-screen graphics and text, as well as the functions associated with them, can be easily changed to adapt the control panel to the evolving needs of the system, avoiding the need for additional control modules.

Ethernet connection — provides an inexpensive, easily installed, cabling option for connecting products located anywhere else on the network.

Power over the Ethernet (PoE) — twisted pair cable carries network information and 48 VDC from the power supply to the touchpanel.

Compatibility with most Extron IP Link® products — allows easy integration into existing systems.

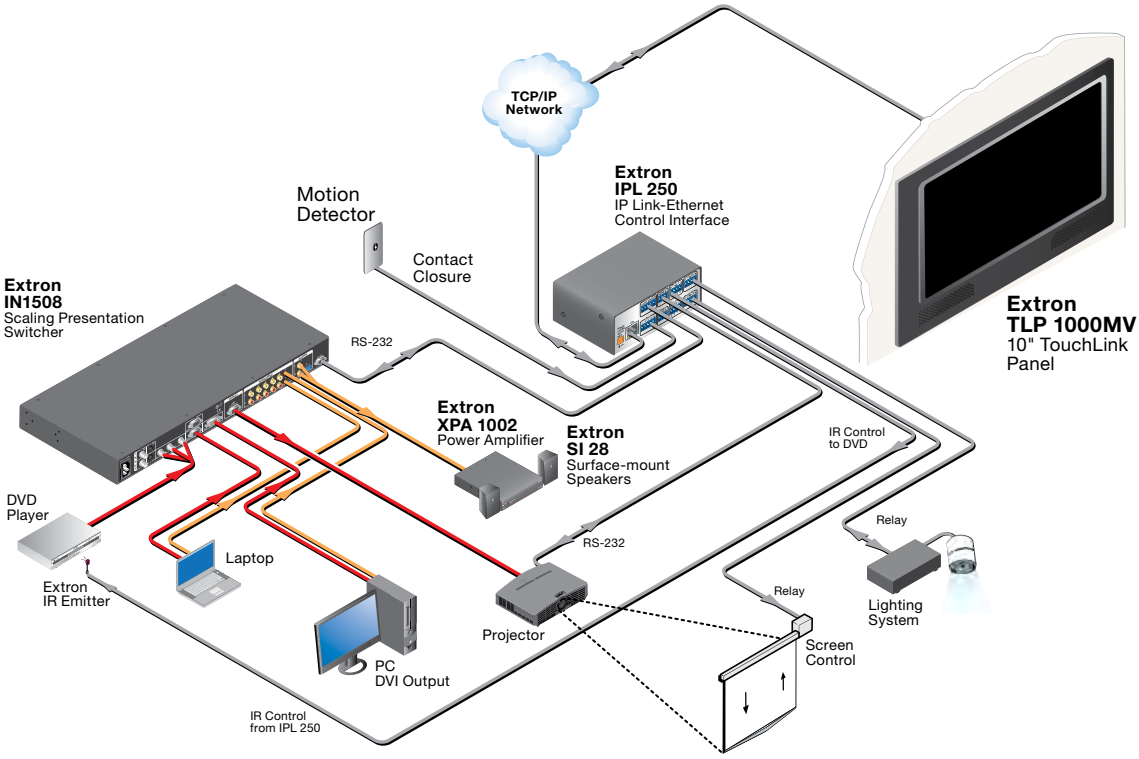


Figure 1. TLP 1000MV Application Diagram

Programmable LEDs — provide feedback about various system states, as defined by the user.

Light sensor — adjusts LCD screen backlighting to compensate for ambient lighting.

Motion sensor — When no motion is detected for a user-defined period of time, the unit enters sleep mode to conserve power. When a user approaches the screen, the panel detects motion and is reactivated.

Loudspeaker — provides audible feedback in response to events triggered by the user.

Kensington lock support — allows the touchpanel to be locked to a table or other flat surface.

Multiple mounting options — The TLP 1000MV can be wall-mounted, rack-mounted, or furniture-mounted.

The TLP 1000TV comes with a stand that allows it to stand on a desktop or be mounted on the Extron swivel mount adapter (SMA-1). If the stand is removed, the unit can be VESA-mounted on a wall or furniture using the Extron LPVM-1.

See the list of **optional parts** on page 40 for the part numbers.

Choice of colors for TLP 1000MV — The TLP 1000MV is available in

- black (part number **60-1105-02**)
- white (part number **60-1105-03**)

Requirements

Computer Software and Hardware

The latest system requirements for running the configuration software can be found on the Extron Website:

- **GUI Configurator**
- **Global Configurator**

Other Hardware

An Extron IP Link control processor must also be connected to the same network domain as the TouchLink panel. Suggested models include:

- IPL T S series (for example IPL T S4)
- IPL 250
- IPL T CR48
- IPL T SFI244
- IPCP 305
- IPCP 505

See the Extron Website (**www.extron.com**) for further information about these products.

Panel Features

This section describes:

TLP 1000MV Front Panel Features and Operations

TLP 1000MV Rear Panel Features and Connections

TLP 1000TV Front Panel Features and Operations

TLP 1000TV Rear Panel Features and Connections

TLP 1000MV Front and Top Panel Features and Operations

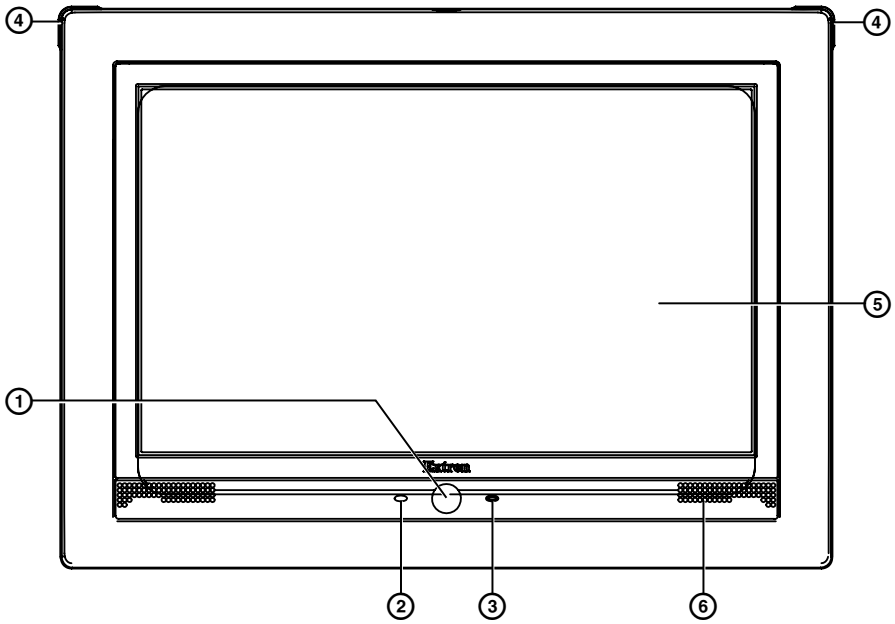


Figure 2. TLP 1000MV Front Panel

① **Motion sensor** — is capped with a small Fresnel lens that focuses light onto the sensor. When no motion has been detected for a user-defined period of time, the unit enters sleep mode. When motion is detected by the sensor, the screen display is restored and active.

② **Microphone** — is located below the LCD screen.

③ **Connection status LED** — is unlit during normal operation. Blinks red if the connection to the IP Link controller is lost.

④ **Configurable LEDs (2)** — two LEDs on the top corners of the panel can be programmed by the user to provide information about the system. The LEDs can be programmed to light red or green and have two rates (blinking and always on).

⑤ **LCD screen** — has a 1024x600 resolution with a touch overlay. A graphical user interface, designed using the **Extron GUI Configurator software** (see page 24), displays buttons, text, or icons on the screen. These are configured for a range of user-defined functions, using the **Extron Global Configurator software** (see page 29).

⑥ **Speakers** — two speakers located under the screen, on either side of the panel, provide audible feedback for the user.

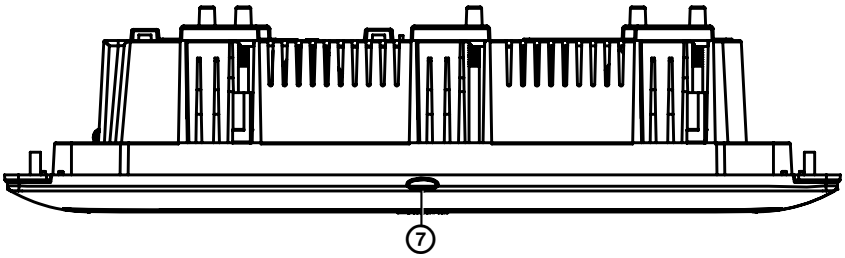


Figure 3. TLP 1000MV Top View

⑦ **Light sensor** — mounted on top of the display frame. The sensor monitors the level of ambient light and adjusts the screen brightness and button backlighting. The sensor can only be viewed from above the panel.

Reset Buttons and LED

There are two buttons and an LED recessed behind the faceplate.

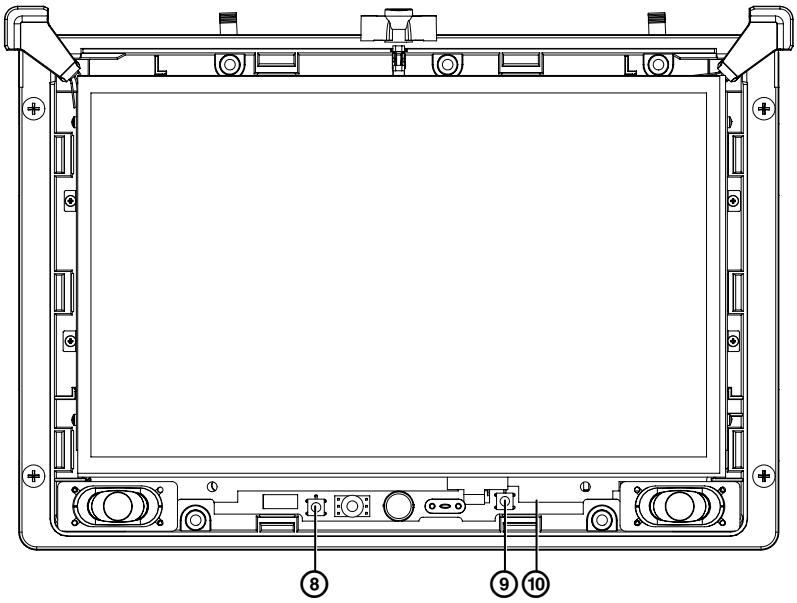


Figure 4. TLP 1000MV Front Panel with the Bezel Removed

⑧ **Menu button** — activates the **on-screen menus** for calibrating the unit (see page 14).

⑨ **Reset button** — allows the unit to be reset in any of four different modes. For further information see "**Reset Modes**" on page 47.

⑩ **Reset LED** — provides feedback about the reset status when the user presses the reset button. For further information see "**Reset Modes**" on page 47.

TLP 1000MV Rear Panel Features and Connections

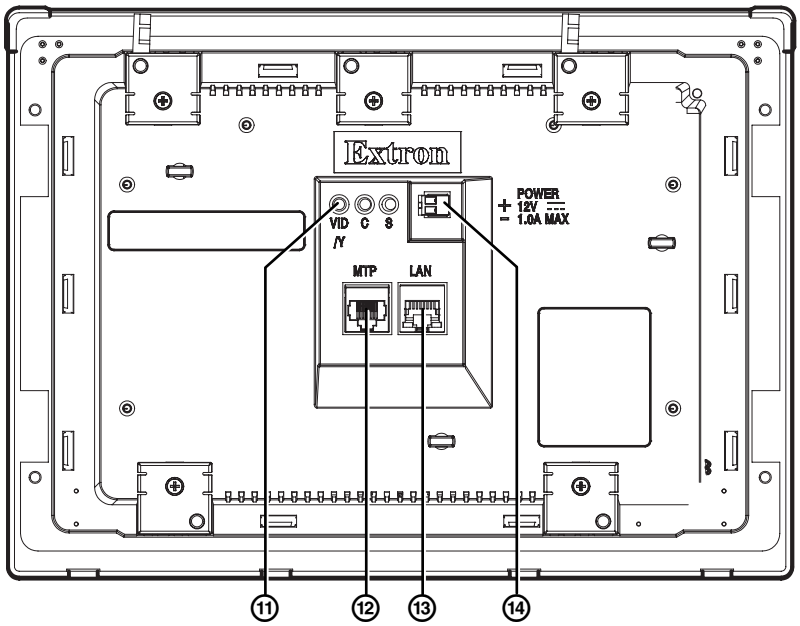


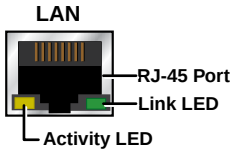
Figure 5. TLP 1000MV Rear Panel Features

⑪ **MTP signal adjustment controls** — use a small screwdriver to adjust these three MTP signal variables: S-video luminance gain (VID/Y), S-video chrominance gain (C), and sharpness (S). For composite video signals, the gain is controlled by the VID/Y adjustment.

⑫ **MTP input** — connect a twisted pair cable, terminated with an RJ-45 connector, to provide video and audio input from an Extron MTP transmitter.

> **CAUTION:** Connect the MTP transmitter to the MTP socket and the network connector to the network socket. Although both use RJ-45 connectors, the MTP socket (on the left) must be connected to an MTP transmitter and the network socket (on the right) must be connected to a LAN. The wires on each connector use different voltages and inputting the wrong voltages into a socket will damage the TLP 1000MV.

⑬ **Network and Power over Ethernet connector** — the TLP 1000MV connects to a network using a twisted pair cable, terminated with an RJ-45 connector.



The network port has two LEDs. The green LED lights solid to indicate that the touchpanel is connected correctly to a network. The yellow LED flashes to indicate that data is being passed to or from the touchpanel.

An Extron IP Link control processor must also be connected to the same network domain. **Suggested models** are listed on page 3.

Use a straight-through Ethernet cable to connect the panel to a switch or router. Use a crossover cable to connect the panel directly to a computer.

Extron recommends using a Power over Ethernet (PoE) power supply. Use a straight-through Ethernet cable to connect the power supply to a switch or router. This cable carries network information from the switch or router to the power supply input. Connect a second straight-through cable to carry the network information and 48 VDC from the power supply to the TLP 1000MV. Connect the IEC power cord from the PoE power supply to a convenient 100 VAC to 240 VAC, 50-60 Hz power source.

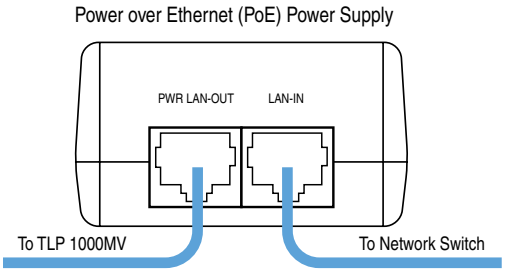


Figure 6. Connecting the Power over Ethernet Power Supply

CAUTIONS:

- The TLP 1000MV and TLP 1000TV are intended for connection to a Power over Ethernet circuit for intrabuilding use only and are considered a Network Environment 0 per IEC TR62101.
- Always use a power supply supplied or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may damage the supply and end product.
- Extron power supplies are certified to UL/CSA 60950-1 and are classified as LPS (Limited Power Source). Use of a non-LPS or unlisted power supply will void all regulatory compliance certification.
- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities. The power supply is to be located within the same vicinity as the Extron AV processing equipment in an ordinary location, Pollution Degree 2, secured to the equipment rack within the dedicated closet, podium or desk. Power over Ethernet (PoE) is intended for indoor use only. No part of the network that uses PoE can be routed outdoors.
- The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 75 and the Canadian Electrical Code part 1, section 16. The power supply shall not be permanently fixed to building structure or similar structure.

⑭ **Power connector** — connect the two pole, 3.5 mm captive screw connector from the 12 VDC, 1.0 A power supply (not provided) to the power supply socket on the rear panel. Ensure the connections have the correct polarity as shown below.

NOTES:
- Extron recommends using the Power over Ethernet power supply. This 12 VDC, 1.0 A power supply should be used only for setup or troubleshooting.
- If both power supplies are connected to the TLP 1000MV, the PoE power supply takes precedence.

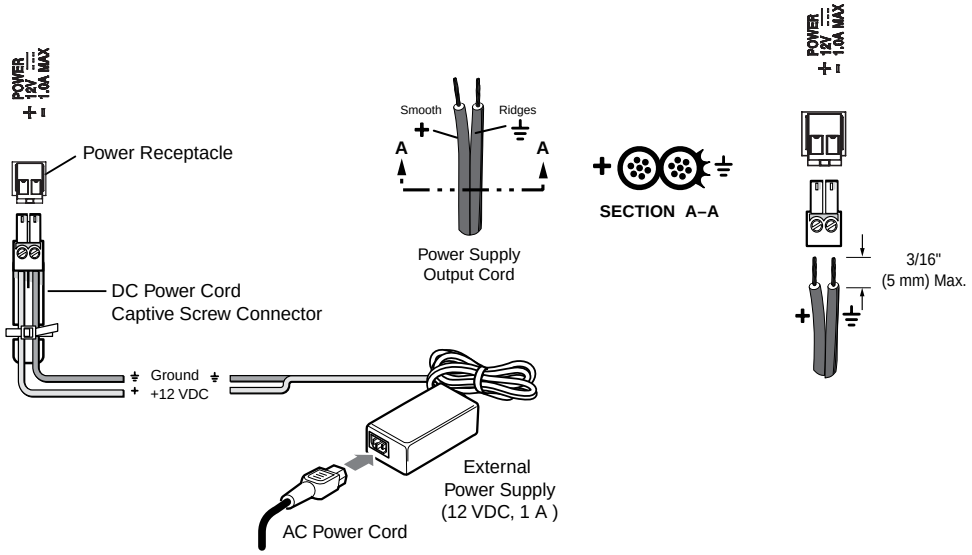


Figure 7. Power Supply Connection

CAUTIONS:
- Always use a power supply supplied by or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the end product.
- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities. The power supply is to be located within the same vicinity as the Extron AV processing equipment in an ordinary location, Pollution Degree 2, secured to the equipment rack within the dedicated closet, podium or desk.
- The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 75 and the Canadian Electrical Code part 1, section 16. The power supply shall not be permanently fixed to building structure or similar structure.

NOTES:
- The length of the exposed wires in the stripping process is critical. The ideal length is 3/16 inches (5 mm). Any longer and the exposed wires may touch, causing a short circuit between them. Any shorter and the wires can be easily pulled out even if tightly fastened by the captive screws.
- Do not tin the wires. Tinned wire does not hold its shape and can become loose over time.

TLP 1000TV Front Panel Features and Operations

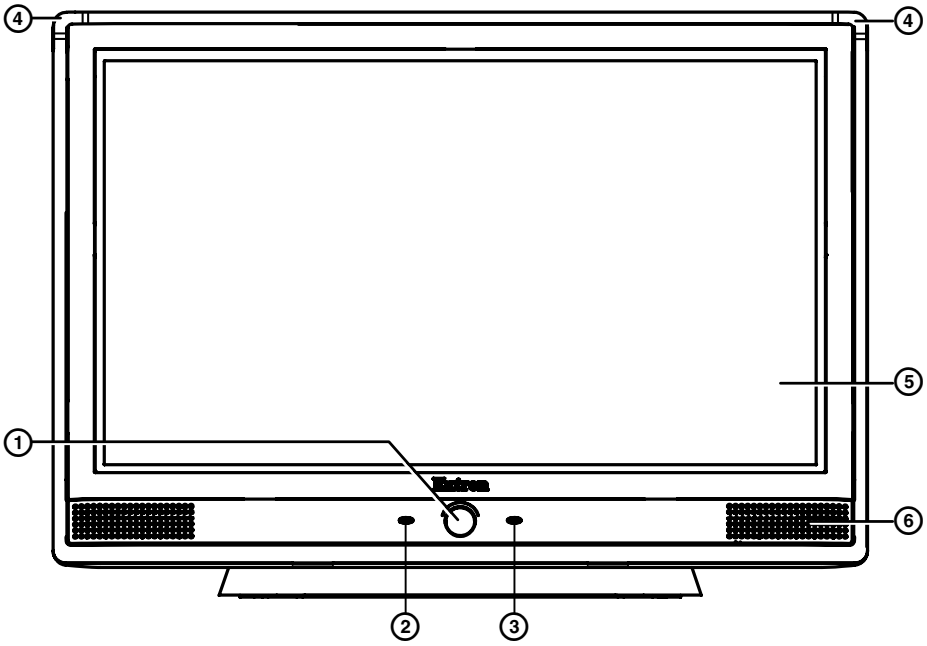


Figure 8. TLP 1000TV Front Panel Features

① **Motion sensor** — is capped with a small Fresnel lens that focuses light onto the sensor. When no motion has been detected for a user-defined period of time, the unit enters sleep mode. When motion is detected by the sensor, the screen display is restored and active.

② **Microphone** — is located below the LCD screen.

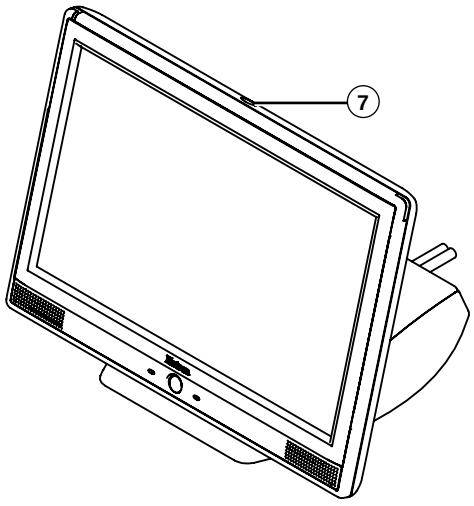
③ **Connection status LED** — is unlit during normal operation. Blinks red if the connection to the IP Link controller is lost.

④ **Configurable LEDs (2)** — on the top corners of the panel can be programmed by the user to provide information about the system. The LEDs can be programmed to light red or green and have two rates (blinking and always on).

⑤ **LCD screen** — has a 1024x600 resolution with a touch overlay. A graphical user interface, designed using the **Extron GUI Configurator software** (see page 24), displays buttons, text, or icons on the screen (page 24). These are configured for a range of user-defined functions, using the **Extron Global Configurator software** (see page 29).

⑥ **Speakers** — two speakers located under the screen, on either side of the panel, provide audible feedback for the user.

⑦ **Light sensor** — (see the figure to the right) mounted on top of the display frame. The sensor monitors the level of ambient light and adjusts the screen brightness and button backlighting. The sensor can only be viewed from above the panel.



TLP 1000TV Rear Panel Features and Connections

The TLP 1000TV has a stand that allows it to be placed on desktop. The stand can be removed to VESA mount the unit. Both the stand and the touchpanel have removable covers that conceal the rear panel features and protect cables that are attached to the TLP 1000TV.

The **rear and base covers can be removed** using the Extron removal tool (see page 45).

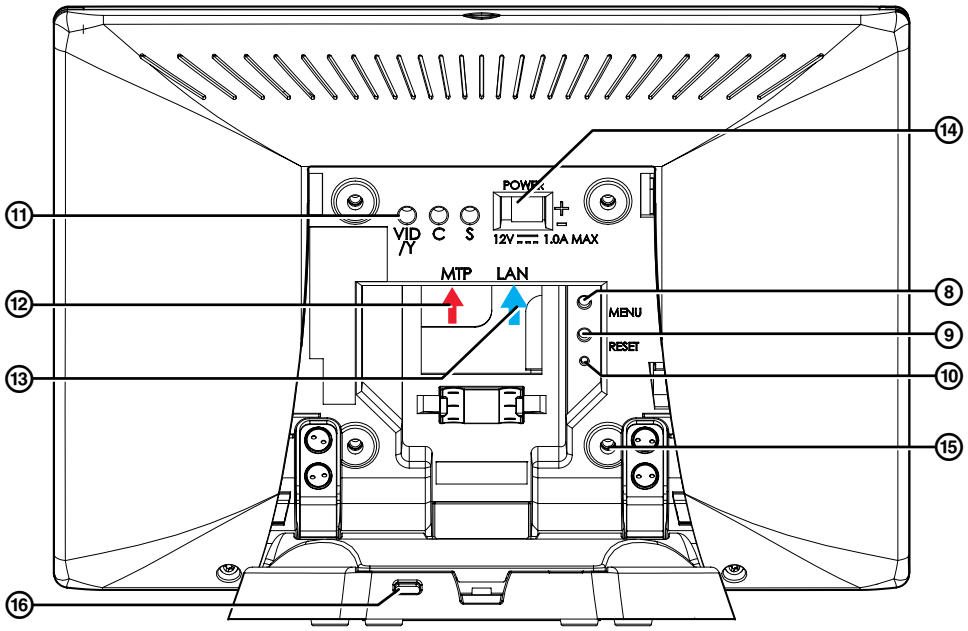


Figure 9. TLP 1000TV Rear Features

The following features and connections are available on the back panel.

⑧ **Menu button** — activates the **on-screen menus** for calibrating the unit (see page 14).

⑨ **Reset button** — allows the unit to be reset in any of four different modes (see "**Reset Modes**" on page 47).

⑩ **Reset LED** — provides feedback about the reset status when the user presses the reset button (see "**Reset Modes**" on page 47).

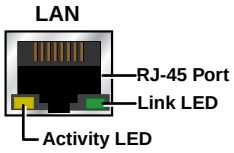
⑪ **MTP signal adjustment controls** — three MTP signal adjustments are available for S-video luminance gain (VID/Y), S-video chrominance gain (C), and sharpness (S). For composite video signals, the gain is controlled by the VID/Y adjustment.

⑫ **MTP input** — a twisted pair cable, terminated with an RJ-45 connector, provides video and audio input from an Extron MTP transmitter. The MTP port is in the top surface of the recessed area (see the red arrow in figure 9).

> **CAUTION:** Connect the MTP transmitter to the MTP socket and the network connector to the network socket. Although both use RJ-45 connectors, the MTP socket (on the left) must be connected to an MTP transmitter and the network socket (on the right) must be connected to a LAN. The wires on each connector use different voltages and inputting the wrong voltages into a socket will damage the TLP 1000TV.

⑬ **Network and Power over Ethernet connector** — the TLP 1000TV connects to a network using a twisted pair cable, terminated with an RJ-45 connector. The LAN port is in the top surface of the recessed area (see the blue arrow in figure 9).

The LAN port has two LEDs. The green LED lights solid to indicate that the touchpanel is connected correctly to a network. The yellow LED flashes to indicate that data is being passed to or from the touchpanel.



An Extron IP Link control processor must also be connected to the same network domain. **Suggested models** are listed on page 3.

Use a straight-through Ethernet cable to connect the panel to a switch or router. Use a crossover cable to connect the panel directly to a computer.

Extron recommends using a Power over Ethernet (PoE) power supply. Use a straight-through Ethernet cable to connect the power supply to a switch or router. This cable carries network information from the switch or router to the power supply input. Connect a second straight-through cable to carry the network information and 48 VDC from the power supply to the TLP 1000TV. Connect the IEC power cord from the PoE power supply to a convenient 100 VAC to 240 VAC, 50-60 Hz power source.

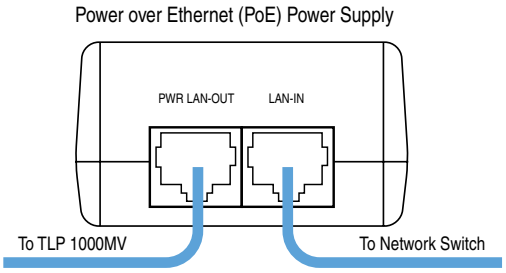


Figure 10. Connecting the Power over Ethernet Power Supply

> **CAUTION:** See the **cautions** on page 7 for important information about using a Power over Ethernet power supply.

> **NOTE:** The twisted pair cable providing the MTP and network connections should be secured together and to both the back panel and base using zip-ties (see **figure 11**, on the next page).

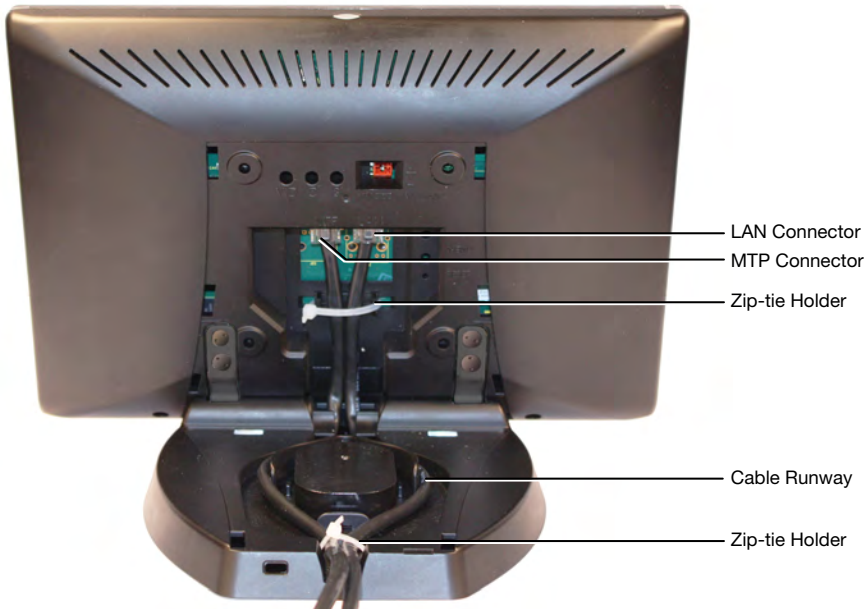


Figure 11. Connecting and Securing Cables

⑭ **Power connector** — connect the two pole, 3.5 mm captive screw connector from the 12 VDC, 1.0 A power supply (not provided) to the power supply socket on the rear panel. Ensure the connections have the correct polarity as shown below.

NOTES:
- Extron recommends using the Power over Ethernet power supply. The 12 VDC, 1.0 A power supply should be used only for setup or troubleshooting.
- If both power supplies are connected to the TLP 1000TV, the PoE power supply takes precedence.

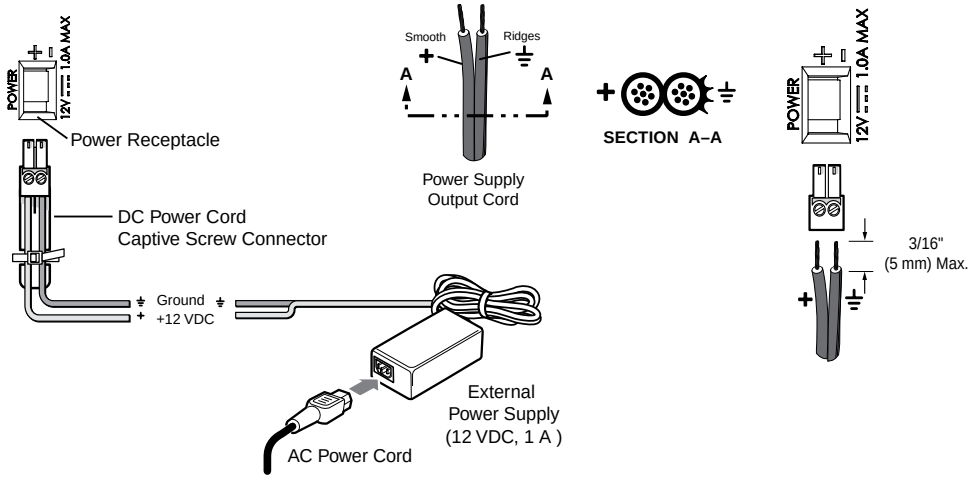


Figure 12. Power Supply Connection

CAUTION: See the **cautions** on page 8 for important information about power supplies.

NOTE: See the **notes** on page 8 for important information about wiring captive screw connectors.

⑮ **VESA mounting holes (4)** — for wall mounting, use these four holes, arranged in a pattern that is in accordance with the VESA FDMI standard, type D 75 mm (see "**VESA mounting the TLP 1000TV"** on page 46).

⑯ **Kensington Security Slot** — allows the touchpanel to be locked to a table or other flat surface. The lock is not provided and must be purchased separately.

Initial Configuration and Calibration

This section describes:

- **How to Access the Internal On-screen Menus**
- The **Main**, **Volume**, **Time**, **Network**, and **Video** screens
- **The Screen Touch Calibration Screen**

How to Access the Internal On-screen Menus

When the TouchLink panel first has power applied, the unit boots up and displays the opening screen. To access the on-screen menus, press the Menu button (see page 5 for the **TLP 1000MV** or page 10 for the **TLP 1000TV**).

The menus open at the Main screen. There are five different screens (**Main**, **Volume**, **Time**, **Network**, and **Video**) that can be selected by pressing the appropriate button at the left side of the screen.

There is also an **`Exit`** button at the bottom left corner of the screen. Pressing this button applies and saves any changes and leaves the menu screens.

Main Screen

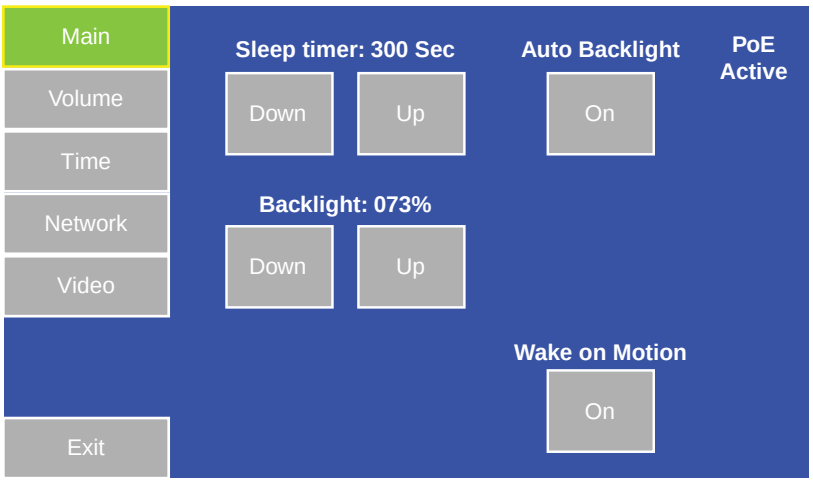


Figure 13. Main Screen

Values can be changed by pressing the buttons to highlight them. Press the **`Down`** or **`Up`** buttons to adjust the values or press the Auto Backlight or Wake on Motion buttons to toggle between **`Off`** and **`On`**. The current setting is shown above the buttons.

The **sleep timer** determines how long the panel will be inactive before it enters Sleep mode, when the screen goes dark to save power. The time can be changed from **Ø** to **5Ø,ØØØ** seconds (in 10-second increments). The time that is currently selected is shown above the buttons.

The screen may need a high level of backlighting for readability when ambient lighting is high. With low ambient lighting, the backlighting should be low.

Auto Backlight provides a suitable amount of backlighting that is automatically calculated from the amount of ambient light detected by the light detector.

The **Backlight** control sets the backlighting manually from **Ø** to **1ØØ** percent, when Auto Backlight is set to **Off**.

NOTE: When Auto Backlight is set to **On**, changing the percentage of Backlight does not affect the amount of backlighting.

Wake on Motion activates the panel from Sleep mode when motion is detected near the unit. Use the on-screen buttons to toggle the Auto Backlight or Wake on Motion options between **Off** and **On**.

Volume Screen

Figure 14. Volume Screen

Press the **Down** or **Up** buttons to highlight one of the adjustable audio features. Use the **Down** and **Up** buttons to adjust the following settings:

- **Master volume** (between **Ø** and **255**; default **12Ø**) sets the maximum volume for all the other sound volume settings. For example, if the master volume is set to **2ØØ** (approximately 80 percent of maximum), even when the Line In volume is set to **255** (maximum), it will only be equivalent to 80 percent of maximum.
- **Click** (between **Ø** and **255**; default **12Ø**) sets the volume for audible feedback that accompanies events such as a screen button being pressed.
- **Sounds** (between **Ø** and **255**; default **12Ø**) sets the volume of audio from any audio file playback.
- **Line In** (between **Ø** and **255**; default **12Ø**) sets the volume of the audio signal received through the line in from an Extron MTP transmitter.

Time Screen

Figure 15. Time Screen

Use the **Down** or **Up** buttons to adjust the Month, Day, Year, Hours, and Minutes.

NOTE: The Hours value uses the 24-hour clock. For 10 am, set hours to 10; for 10 pm, set hours to 22.

Network Screen

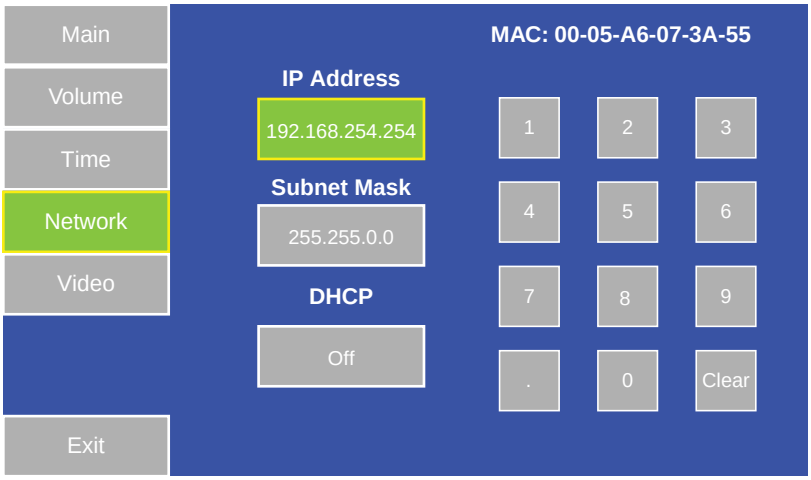


Figure 16. Network Screen

To set the IP address or subnet mask, press the appropriate button. When one of the buttons is selected, an on-screen keypad appears that allows the user to select "**Clear**," or digits between **0** and **9**, and "**.**" (dot).

NOTE: The factory default IP address for both the TLP 1000MV and TLP 1000TV is 192.168.254.254. The default subnet mask is 255.255.0.0. Consult with your IT department to ensure these addresses are correctly assigned.

Toggle between **On** and **Off** to enable or disable Dynamic Host Configuration Protocol (DHCP). This determines whether the unit will have a permanent IP address or will have one provided by the network, when required. The default setting is **Off**.

Video Screen

Figure 17. Video Screen

When a video input is connected to the MTP input, the video can be previewed in the small gray rectangle on the screen. The preview allows you to adjust the following video properties, using the appropriate **Down** or **Up** buttons:

- **Contrast** between 0 and 127 (default, 64)
- **Color** between 0 and 127 (default, 64)
- **Brightness** between 0 and 255 (default, 128)
- **Tint** between 0 and 255 (default, 128)

Touch Calibration Screen

After setting the **Main**, **Volume**, **Time**, **Network**, and **Video** values, press the **Menu** button a second time to begin calibrating the touch area of the touchpanel.

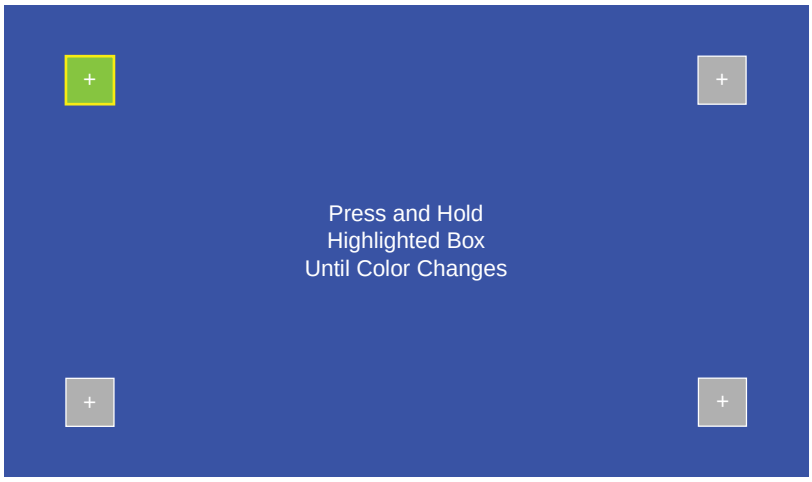


Figure 18. Touch Calibration Screen

Press on the green box until the color reverts to gray with a white border and a second box is highlighted. Repeat until all four boxes have been pressed and calibrated. At that point the screen automatically returns to the **Main screen** (see page 14).

Exit the on-screen menus, by pressing the **Exit** button in the bottom left corner of the menu screens.

Configuration Software

This section of the user guide provides information about:

- **The Configuration Software**
- **Installing the Software**
- **Using the TouchLink Panel Web Pages**
- **Updating the Firmware**
- **Using GUI Configurator**
- **Using Global Configurator**

The Configuration Software

Create a graphical user interface (GUI) for the TouchLink panel in two steps:

1. Design the layout of the text and graphics **using GUI Configurator**.
2. Assign functions to the text and graphics **using Global Configurator**.

The GUI Configurator software is a Windows-based application. The interface is designed either by customizing an existing template or by designing an entirely new interface. GUI Configurator offers several templates to manage control system devices.

After the GUI has been designed on a PC, the project is saved, built, and uploaded to the TouchLink panel to verify what it looks like on the screen. It is then imported from the TLP unit to Global Configurator where control functions are assigned to the text and graphic items in the layout. After assigning the control functions, the project is rebuilt and uploaded to the controller.

These two programs provide versatility and adaptability for configuration and control of an AV system as it grows and evolves.

Installing the Software

GUI Configurator and Global Configurator Installation

NOTE: You must use Global Configurator 3.1 or a later version and GUI Configurator 1.2 or a later version to configure the TLP 1000MV or TLP 1000TV.

Insert the disc provided into the DVD-ROM drive of the computer. If the setup program does not start automatically, run `Launch.exe` from the DVD-ROM directory in Windows **`My Computer`**. Select the **`Software`** tab, locate the GUI Configurator program and click **`Install`**. Follow the on-screen instructions.

By default, the Installer program creates and places the GUI Configurator program in the `C:\Program Files\Extron\GUI Configurator` folder. An icon may also be placed on the Windows desktop.

If required, locate the Global Configurator program on the disc or website and install that also. By default, the Installer program creates and places the Global Configurator program in the `C:\Program Files\Extron\GCx.x` folder, where *x.x* represents the version of the Global Configurator program. During installation, there is an option to place an icon on the Windows desktop.

Both programs can be downloaded from the Extron website (**www.extron.com**). Select the **Download** tab and click the **Software** option in the sidebar at the left. Navigate to GUI Configurator or Global Configurator and click **Download** next to the program. Follow the on-screen instructions to complete installation. A folder is created on the C:\ drive and an icon may be placed on the desktop.

Using the TouchLink Panel Web Pages

Both the TouchLink panels have default web pages that can be used to read and change the current settings of the panels. The web pages can be accessed as follows:

1. Open your browser and type the IP address of the TLP 1000 unit into the address field. The browser opens the TouchLink panel Status page, which is read-only and provides basic information about the model, date and time, and IP settings.

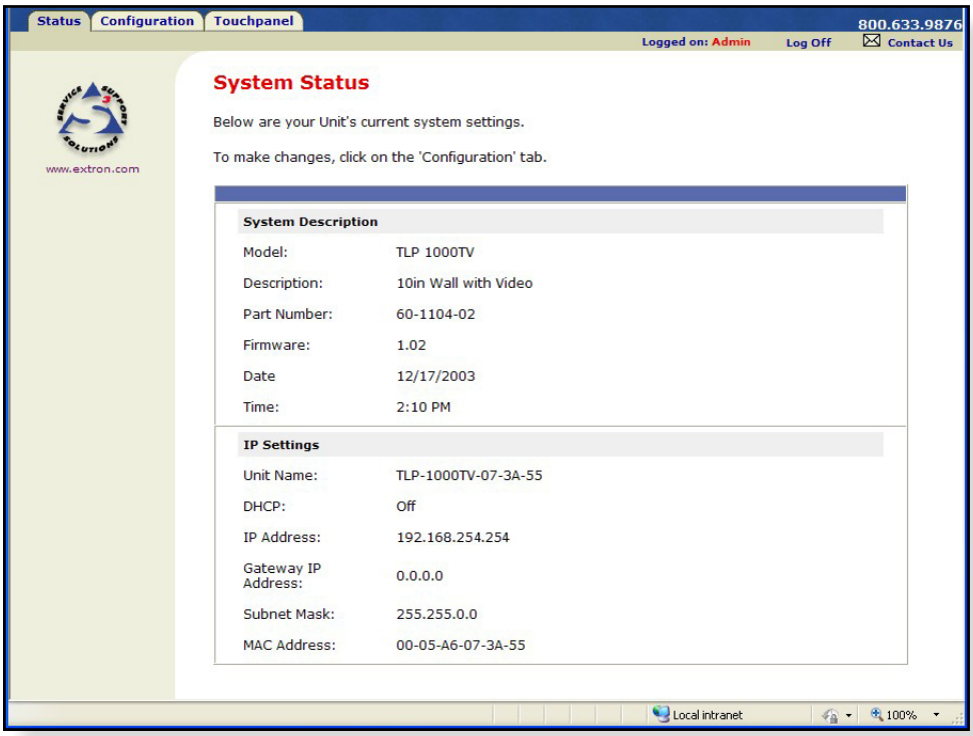


Figure 19. System Status Page

2. Click the **Configuration** tab and select **System Settings**, which allows the user to modify the IP settings and the date and time settings. These correspond to the **network settings** (see page 16) and **time settings** (see page 16) in the on-screen menus.

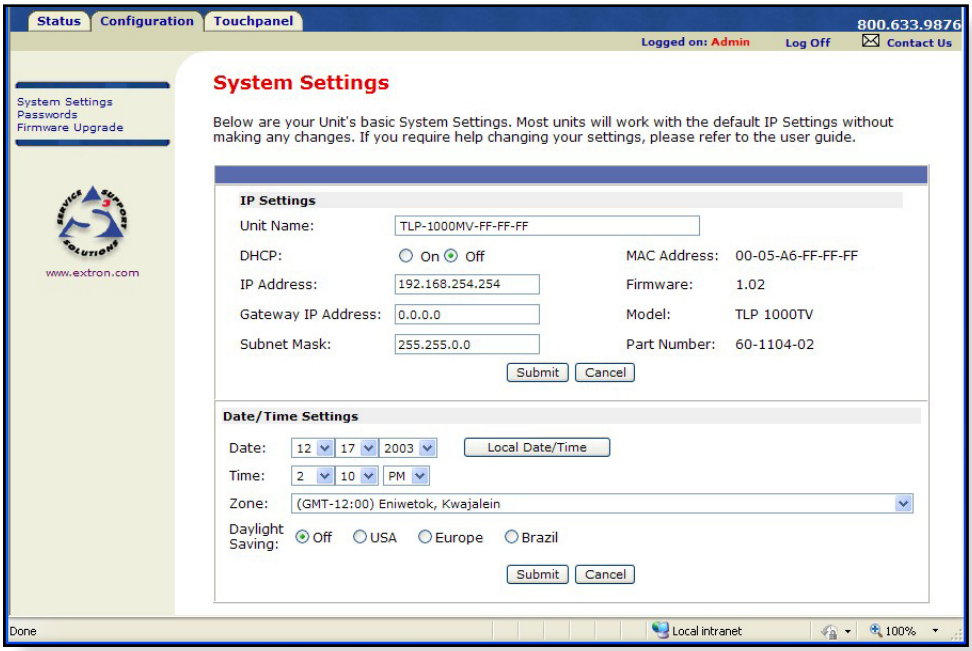


Figure 20. System Settings Page

3. Selecting **Passwords** allows the user to set passwords for an administrator and a user. To set a password, follow the instructions at the top of the page.

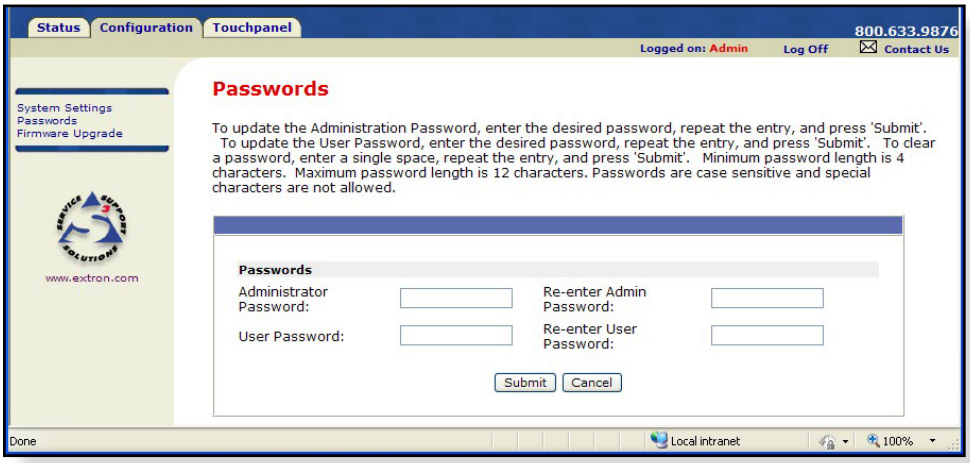

Status
Configuration
Touchpanel
800.633.9876
Logged on: Admin
Log Off
Contact Us
System Settings
Passwords
Firmware Upgrade
www.extron.com
Passwords
To update the Administration Password, enter the desired password, repeat the entry, and press 'Submit'. To update the User Password, enter the desired password, repeat the entry, and press 'Submit'. To clear a password, enter a single space, repeat the entry, and press 'Submit'. Minimum password length is 4 characters. Maximum password length is 12 characters. Passwords are case sensitive and special characters are not allowed.
Passwords
Administrator Password:
Re-enter Admin Password:
User Password:
Re-enter User Password:
Submit
Cancel
Done
Local intranet
100%

Figure 21. Passwords Page

4. To upgrade the firmware, select **Firmware Upgrade**. More detailed instructions are found in the "**Updating Firmware from a Web Browser**" section on page 23.

5. Click the **Touchpanel** tab to open the Touchpanel Configuration page, which allows the user to alter the touchpanel and volume settings. These correspond to the **main settings** (see page 14) and **volume settings** (see page 15) in the on-screen menus.

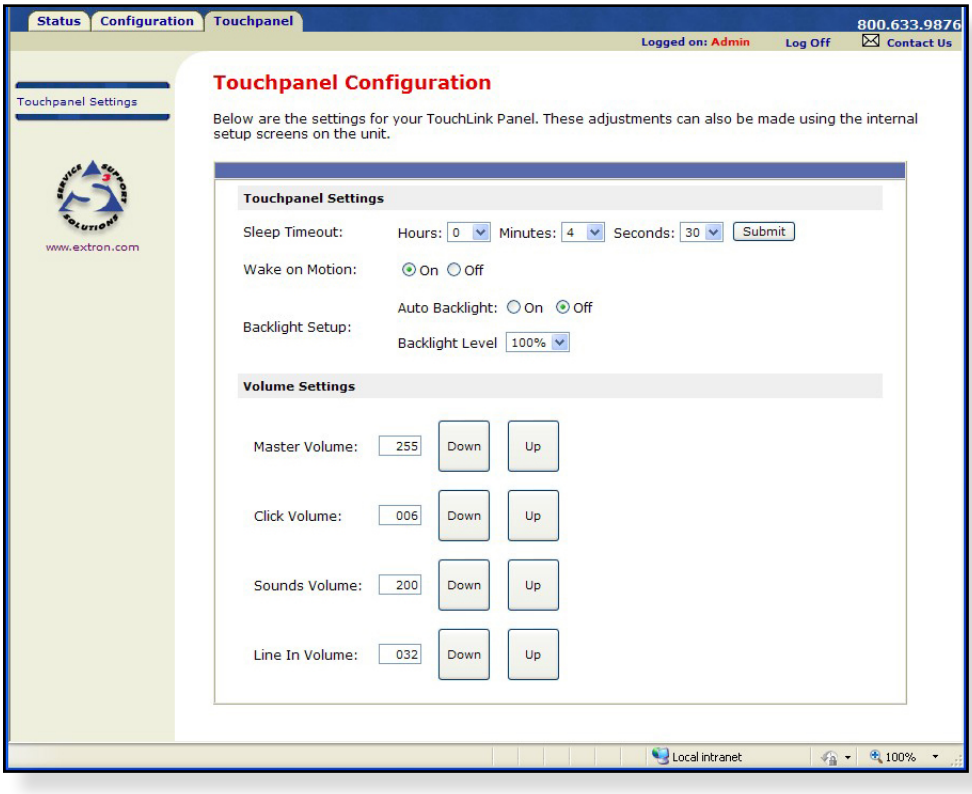


Figure 22. Touchpanel Configuration Page

Updating the Firmware

Firmware for both touchpanels can be upgraded using the **Extron Firmware Loader**, using the **TLP 1000 default web page**, or using **GUI Configurator**. Before starting, consult your IT team and ensure that the touchpanel has a unique IP address.

Updating Firmware Using Extron Firmware Loader

1. Power on a computer that is connected to the same network as the touchpanel.
2. Install the Extron Firmware Loader utility onto the computer if it is not already present. This is on the software disc that ships with unit or can be downloaded, free of charge, from the Extron website (**www.extron.com**).

   To install from the disc, insert the disc into the DVD-ROM drive of the computer and follow the same procedure as for **installing the GUI Configurator and Global Configurator programs** (see page 18).

   To install from the Extron website (**www.extron.com**), select the **Download** tab and click the **Software** tab. Locate the Firmware Loader and click **Download**. Follow the on-screen instructions to complete installation.

3. From the same site, download the firmware for the TouchLink panel. Click the **Download** tab on the Extron home page and select the **Firmware** option.

Figure 23. Extron Web Page — Download Center

4. Navigate to the TLP 1000MV or TLP 1000TV firmware and click **Download**.

   This downloads the firmware to your computer. Note the folder in which the firmware file is saved.

5. Open the Extron Firmware Loader by clicking on the desktop icon.
6. Select **TLP 1000MV** or **TLP 1000TV** from the **Device** drop-down menu.
7. Select **TCP/IP** from the **Connection Method** drop-down menu.
8. Enter the IP address for the TLP 1000, a Telnet port number (this will usually be 23), and a password. Click **Connect**.
9. In the New Firmware File "Path" pane, navigate to the file that was saved in step **4**. Click the **Add** button. The main Firmware Loader screen opens with the TLP 1000MV or TLP 1000TV listed in the device pane.
10. Click **Begin**. The firmware transfer begins and takes approximately three minutes. When the Total Progress bar shows "Completed", select **Exit** from the **File** menu to exit Firmware Loader.

Updating Firmware Using GUI Configurator

1. Set up the computer and touchpanel as described in steps **1** and **2** in the previous section ("**Updating firmware using Extron Firmware Loader**"). If necessary, **install the Extron Firmware Loader** utility onto the computer (see "Installing the Software").
2. Find the firmware on the Extron website and download it to your computer, as described in steps **4** and **5** in the previous section.
3. Open GUI Configurator. Open Firmware Loader by clicking on **Firmware Update Manager...** in the **Tools** menu.

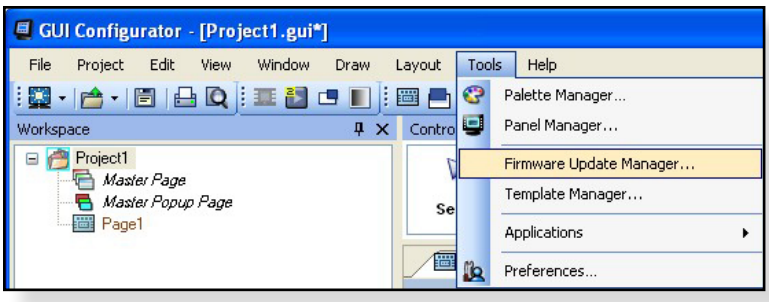


Figure 24. Opening Firmware Loader from GUI Configurator

4. Follow steps **7** to **10** from the previous section, **"Updating Firmware Using Extron Firmware Loader"**.

Updating Firmware From a Web Browser

1. Power on a computer that is connected to the same network as the TLP 1000.
2. From the Extron website (**www.extron.com**), download the firmware for the touchpanel. Click the **Download** tab on the Extron home page and select the **Firmware** option (see figure 23).
3. Navigate to the touchpanel firmware and click **Download**.
4. This downloads the firmware to your computer. Note the folder in which the firmware file is saved.
5. Open your browser and type the IP address of the TLP 1000 unit into the address box. The browser opens the **TouchLink panel web pages** (see page 19).

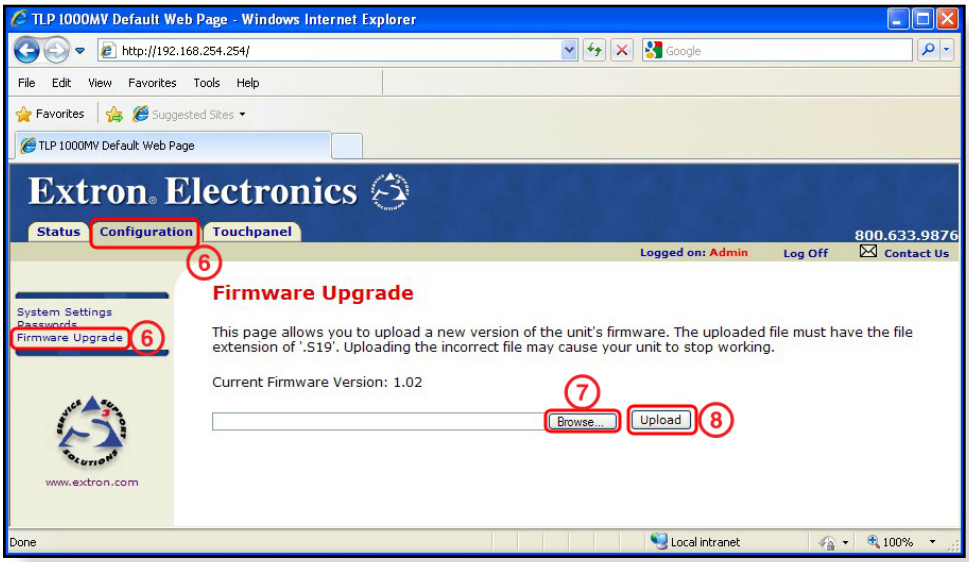


Figure 25. Firmware Upgrade Web Page

6. Click the **Configuration** tab at the top of the page and then select **Firmware Upgrade** from the bar on the left.
7. Use the **Browse** button to navigate to and select the firmware file that was saved in step **4**.
8. Click **Upload**. The Touchpanel screen shows the message "Firmware Uploading... Please Wait...". When the firmware is uploaded, the screen shows the message "Restarting...". Once the firmware is installed, the panel can be calibrated using the **on-screen menus** (see page 14) or the **TouchLink panel web pages** (see page 19).

Using GUI Configurator

This section provides an overview of the GUI Configurator program. For complete information about the program, consult the GUI Configurator help file (select **Contents** in the **Help** menu or press the <F1> key while within the program).

NOTE: To configure the touchpanel, use GUI Configurator version 1.2 or later.

To use the GUI Configurator program, follow these instructions:

1. Double-click the desktop icon. A splash screen appears momentarily and then the program opens at the main screen behind the GUI Configurator Start Options dialog box.

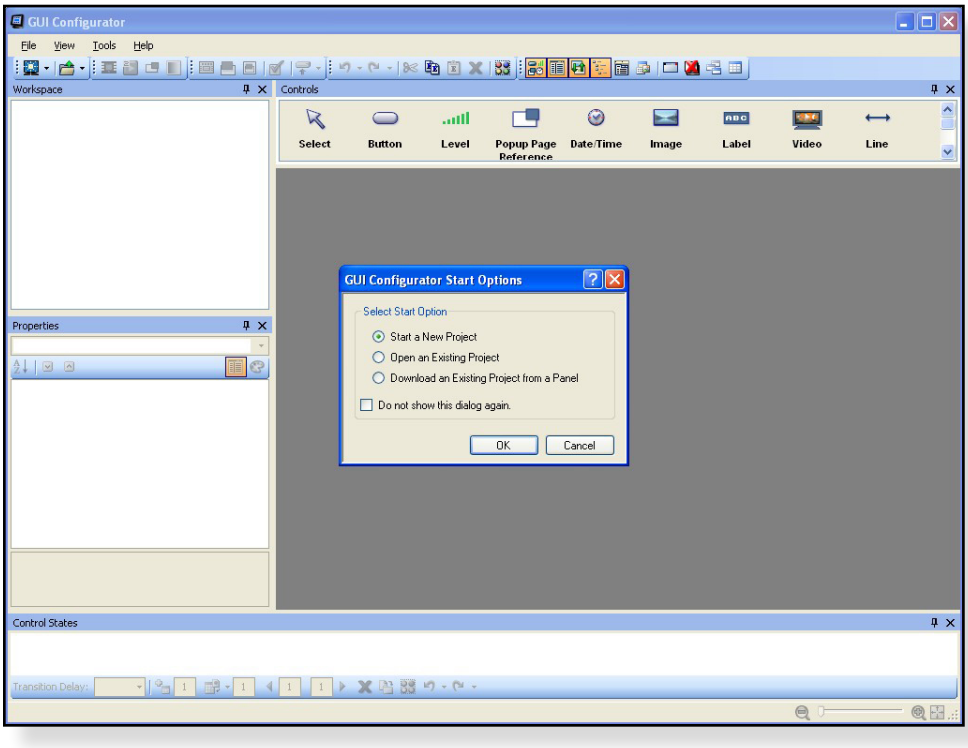


Figure 26. Opening GUI Configurator

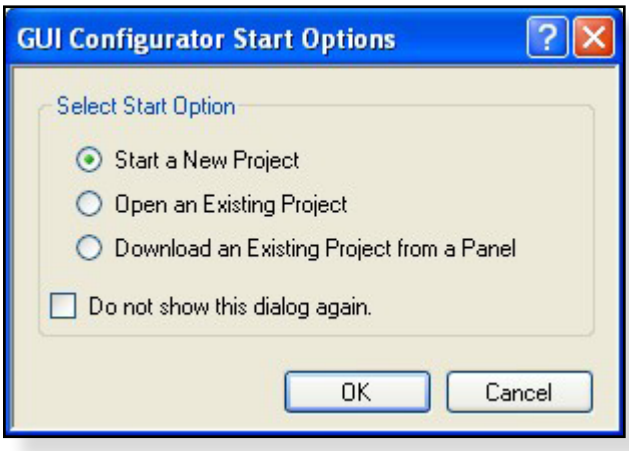


Figure 27. GUI Configurator Start Options Dialog Box

2. You can choose to:

- **`Start a New Project`** — Clicking **`OK`** opens a dialog box that offers a choice of project options.

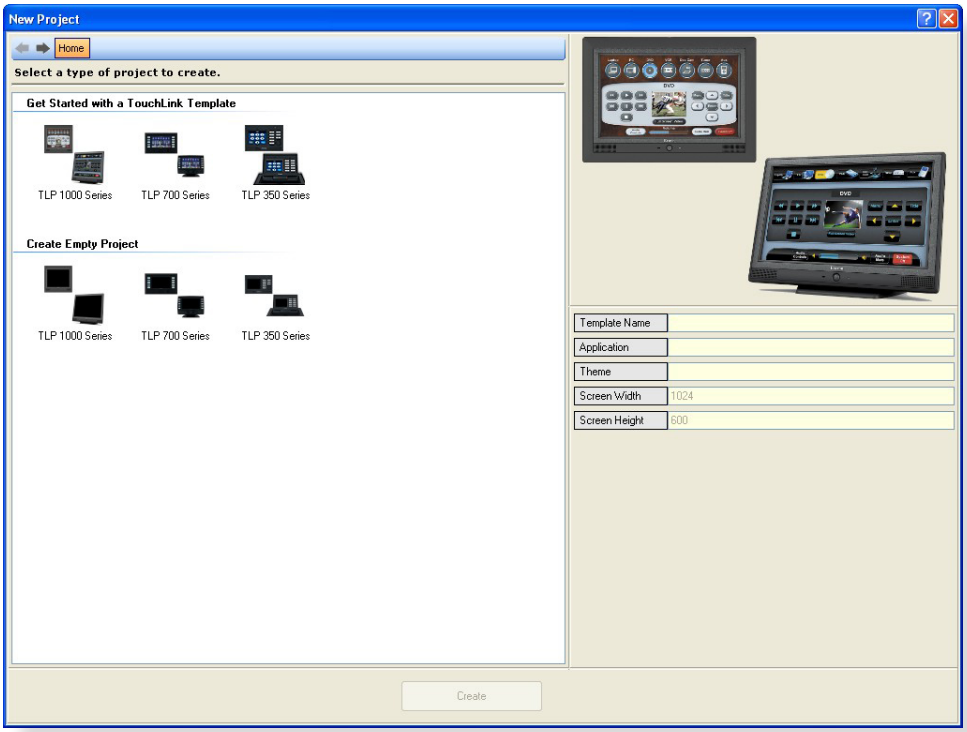


Figure 28. GUI Configurator New Project Dialog Box

A series of icons offer you the choice of creating a project with a template or without a template and allow you to select the size and type of Touchlink panel. If you are creating a project from an existing template, you can use the factory created templates or you can select a template that you have previously created.

- **`Open an Existing Project`** — Clicking **`OK`** opens a dialog box that allows you to navigate to an existing project for modification.

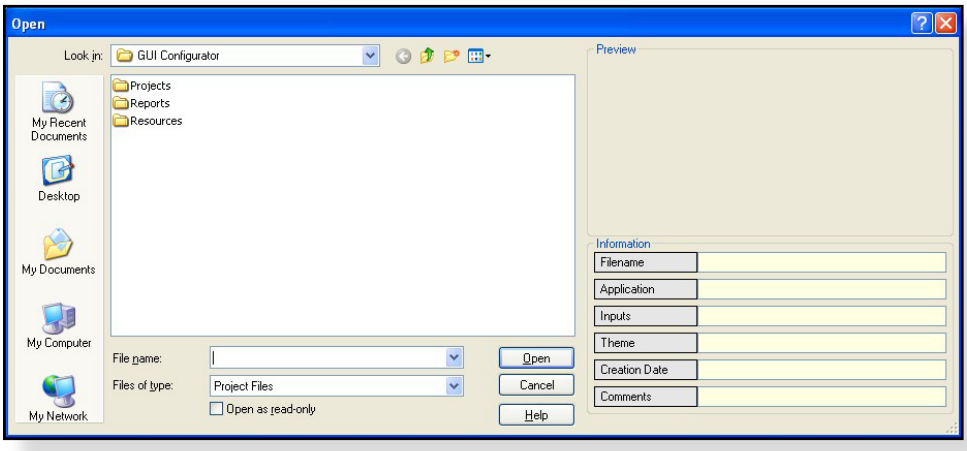


Figure 29. GUI Configurator Dialog Box to Open an Existing Project

Navigate to the existing file and select it. A preview with information about the file appears in the pane on the right.

If you are working on the project, leave the **Open as read-only** box unchecked.

Click **Open** to open the file. The project opens in GUI Configurator.

- **Download an Existing Project from a Panel** — Clicking **OK** opens a dialog box that allows you to download a file that has been uploaded to a panel.

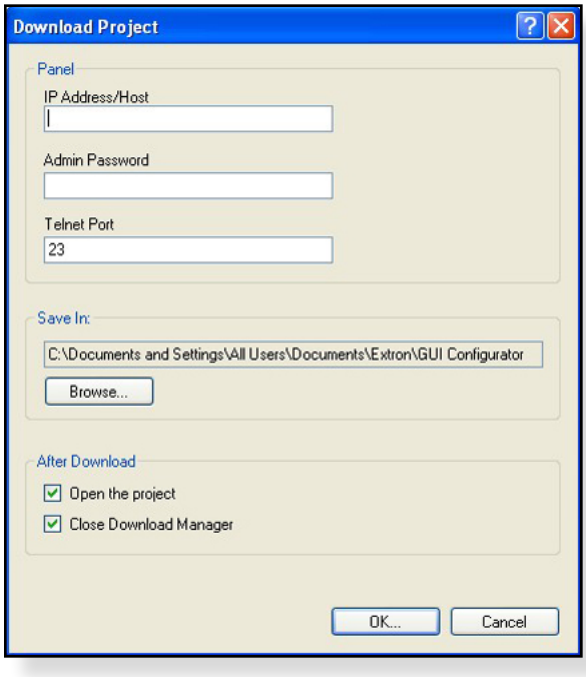


Figure 30. GUI Configurator Download Project Dialog Box

In the dialog box that opens, enter the IP address of the panel and use the **Browse** button to navigate to a folder where the file will be saved.

Check **Open the project** and **Close Download Manager**.

Click **OK**. The project is downloaded to your computer and opens in GUI Configurator.

3. Depending on which option was selected in step **2**, GUI Configurator opens to a new or existing project. The initial screen is divided into a series of panes offering a range of tools that can be used to design or modify the project. For full details on how to use these tools, consult the help file (in the **Help** menu click **Contents**, or press the <F1> key while within the program).

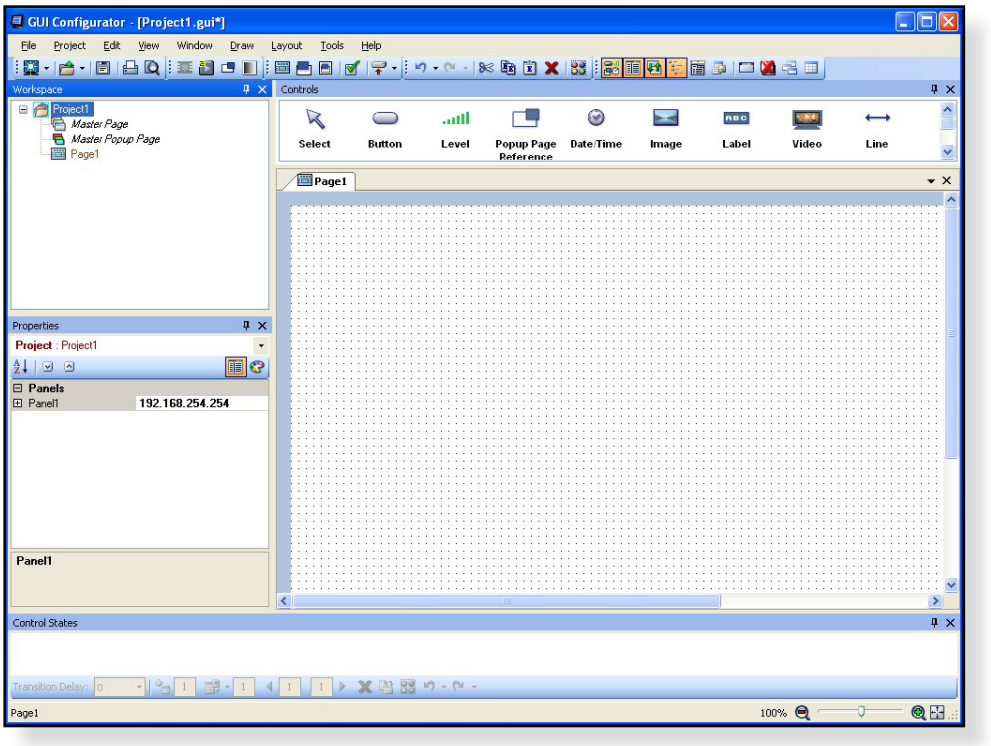


Figure 31. GUI Configurator Main Screen

4. To save the project, select **Save Project** from the **File** menu. The project file is saved. If this is the first time saving the project file, the Save As dialog box appears. If the Save As dialog box appears:
   a. Browse for the location where the project file is to be saved.
   b. Enter a file name for the project.
   c. Click **Save**.

5. The project can be uploaded to one or more TouchLink panels. To add a panel:

   a. From the **Project** menu, select **Add > Panel**:

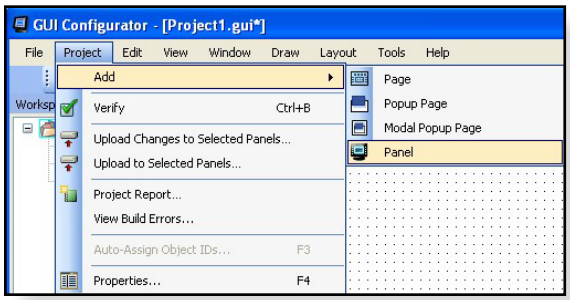


Figure 32. Add a TouchLink Panel

   The Panel Manager dialog box opens:

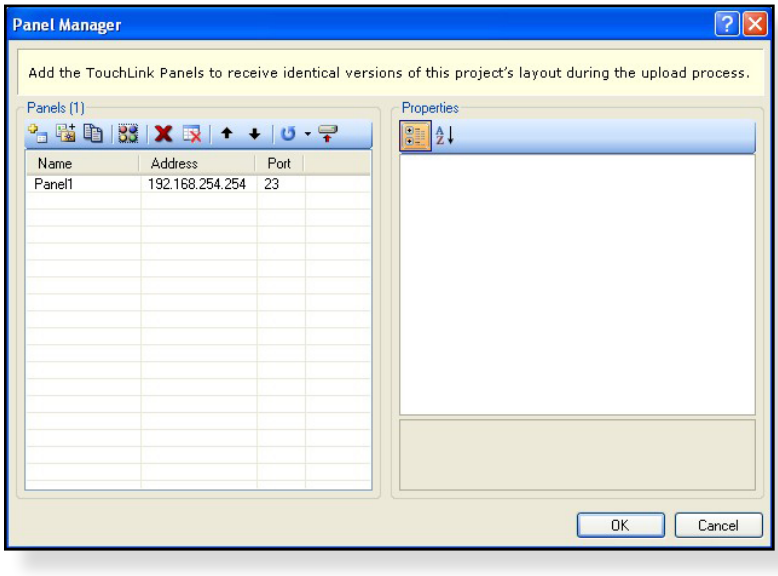


Figure 33. Panel Manager Dialog Box

   b. Click the **Add Panel** icon (shown to the right) to add a new panel to the left pane.

   c. Highlight the name of the panel in the left pane to display the properties of that panel in the right pane.

   d. The default IP address (192.168.254.254) is assigned to any new panel that is added. To change the IP address, highlight the address property in the right pane and type in the correct IP address. Update any other properties, as required.

   e. Repeat steps **5b - 5d** to add further panels, if required.

6. To upload a project to a TouchLink panel:

   a. From the **Project** menu, select **Upload to Selected Panels**. The Build Manager dialog box opens, showing the build progress. After the build is complete, this dialog box closes and the File Upload Manager screen opens. The upload begins automatically.

   b. Select **Close this dialog when upload completes** check box in the Automatic Settings section so that the File Upload Manager screen closes automatically when the upload completes. This option can be set before or during the upload.

If this project has been uploaded to the TouchLink panel before, you can choose to upload only the changes that have been made since the previous upload. You can also choose to upload the new version to some, specified touchpanels or all the TouchLink panels on the list found within the Devices section of the File Upload Manager screen during the upload process.

Using Global Configurator

NOTE: To configure the touchpanel, use Global Configurator version 3.1 or later.

This section provides an overview of the Global Configurator program. For complete information about the program, consult the Global Configurator help file (click **Contents** in the **Help** menu or press the <F1> key while within the program).

This section describes how to set up Global Configurator project with an IPL 250. Setting up a project with another IP Link product is similar but you should consult the Global Configurator help file for exact information about the product you are using.

1. Double-click the GC3 desktop icon. The Global Configurator 3 Start Options box opens.

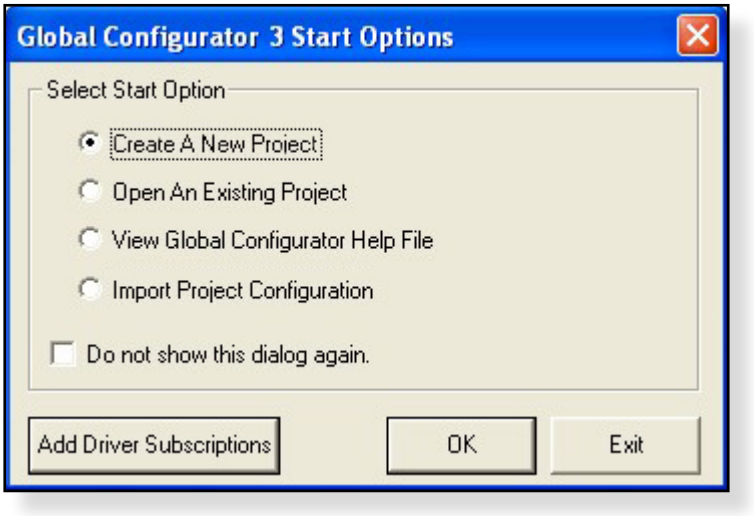


Figure 34. Global Configurator 3 Start Options

2. Select **Create A New Project** and click **OK**. The dialog box closes, leaving the Project Settings screen.

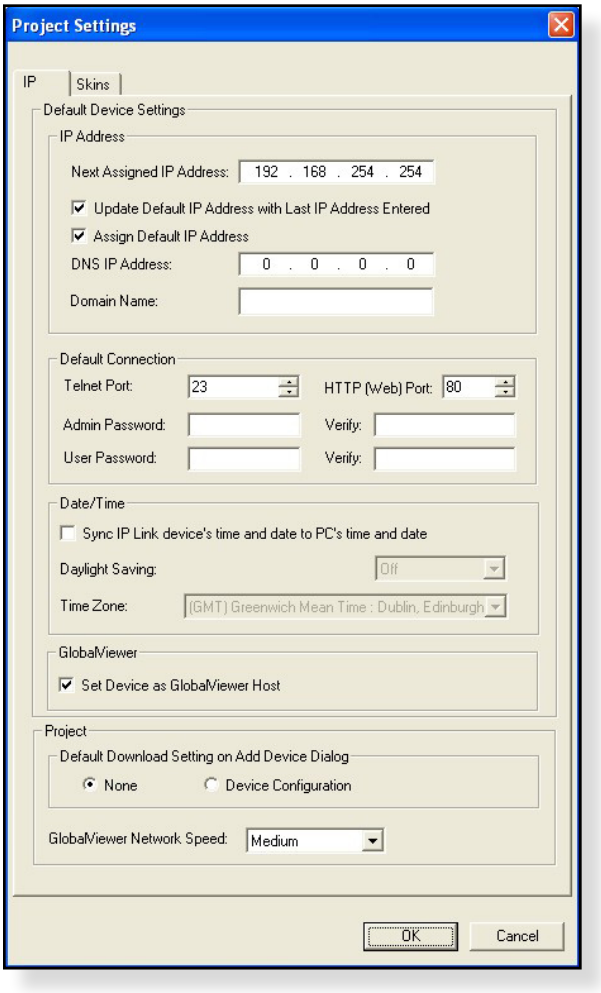


Figure 35. Global Configurator Project Settings

3. Configure the device settings:
   a. Enter the IP address for the IP Link control processor.
   b. The default Telnet connection is port 23 and HTTP is port 80, so these values do not usually need to be changed.
   c. If necessary, set administrator and user passwords.
   d. If required, set the date and time.
   e. Checking the **Set Device as GlobalViewer Host** box is optional. For more information about what a GlobalViewer host is, see the Global Configurator help file.

4. Click **OK**. The Project Settings screen closes and is replaced by the Add Device dialog box:

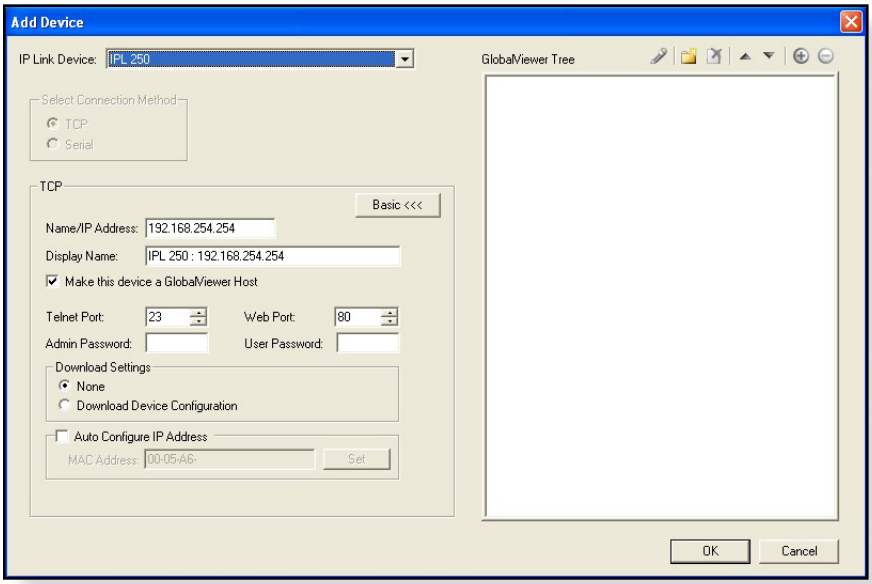


Figure 36. Global Configurator Add Device Dialog Box

To see all the options, click the **Advanced >>>** button. The button name changes to **Basic <<<** (as shown in the figure above).

a. Select the IP Link device from the drop-down menu. In figure 36, above, an IPL 250 controller is added.

b. Enter the IP address of the IP Link control processor. The default value is 192.168.254.254, but this may have been changed. Check with your IT department to verify the address.

c. Enter a display name into the text box. This is what the device will be known as in the Global Configurator project.

d. Checking the **Make this device a GlobalViewer Host** check box is optional.

e. Set the Telnet port (usually 23) and the web port (usually 80).

f. If the controller is password protected, enter the password now.

g. In the right pane, set up a GlobalViewer tree, (see the Global Configurator help file).

5. Click **OK**. The Add Device screen closes. The start-up screen, which was behind it, is now visible, showing the IP Link control processor and the available ports:

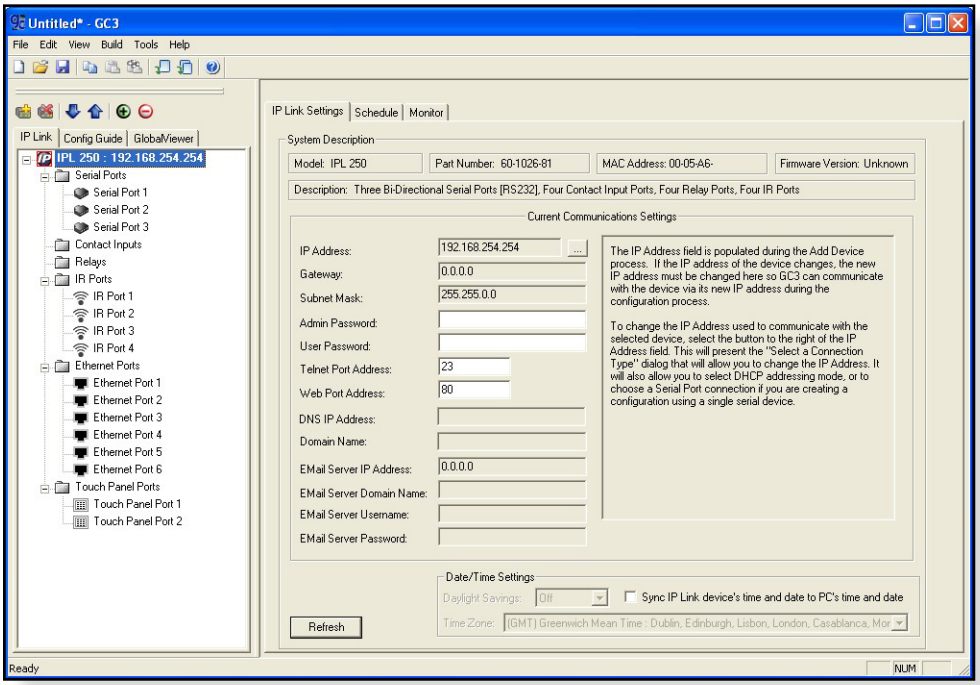

Untitled* - GC3
File Edit View Build Tools Help
IP Link Config Guide GlobalViewer
IPL 250 : 192.168.254.254
Serial Ports
Serial Port 1
Serial Port 2
Serial Port 3
Contact Inputs
Relays
IR Ports
IR Port 1
IR Port 2
IR Port 3
IR Port 4
Ethernet Ports
Ethernet Port 1
Ethernet Port 2
Ethernet Port 3
Ethernet Port 4
Ethernet Port 5
Ethernet Port 6
Touch Panel Ports
Touch Panel Port 1
Touch Panel Port 2
IP Link Settings Schedule Monitor
System Description
Model: IPL 250
Part Number: 60-1026-81
MAC Address: 00-05-A6-
Firmware Version: Unknown
Description: Three Bi-Directional Serial Ports [RS232], Four Contact Input Ports, Four Relay Ports, Four IR Ports
Current Communications Settings
IP Address: 192.168.254.254
Gateway: 0.0.0.0
Subnet Mask: 255.255.0.0
Admin Password:
User Password:
Telnet Port Address: 23
Web Port Address: 80
DNS IP Address:
Domain Name:
EMail Server IP Address: 0.0.0.0
EMail Server Domain Name:
EMail Server Username:
EMail Server Password:
The IP Address field is populated during the Add Device process. If the IP address of the device changes, the new IP address must be changed here so GC3 can communicate with the device via its new IP address during the configuration process.
To change the IP Address used to communicate with the selected device, select the button to the right of the IP Address field. This will present the "Select a Connection Type" dialog that will allow you to change the IP Address. It will also allow you to select DHCP addressing mode, or to choose a Serial Port connection if you are creating a configuration using a single serial device.
Date/Time Settings
Daylight Savings: Off
Sync IP Link device's time and date to PC's time and date
Time Zone: (GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London, Casablanca, Mor
Refresh
Ready
NUM

Figure 37. Configuring an IP Link Device

6. Select **TouchPanel Port 1**. The screen shows the available options for the TouchLink panel. To add the GUI Configurator project that was uploaded to the TouchLink panel, click **Click here to add one**.

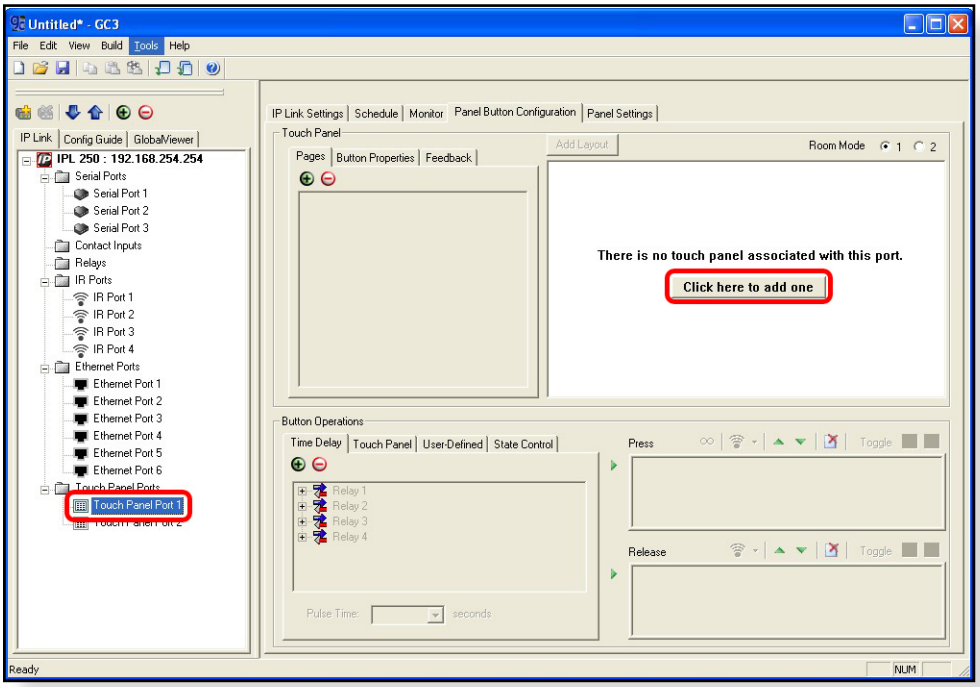


Figure 38. Adding a TouchLink Panel

The Add TouchPanel dialog box opens.

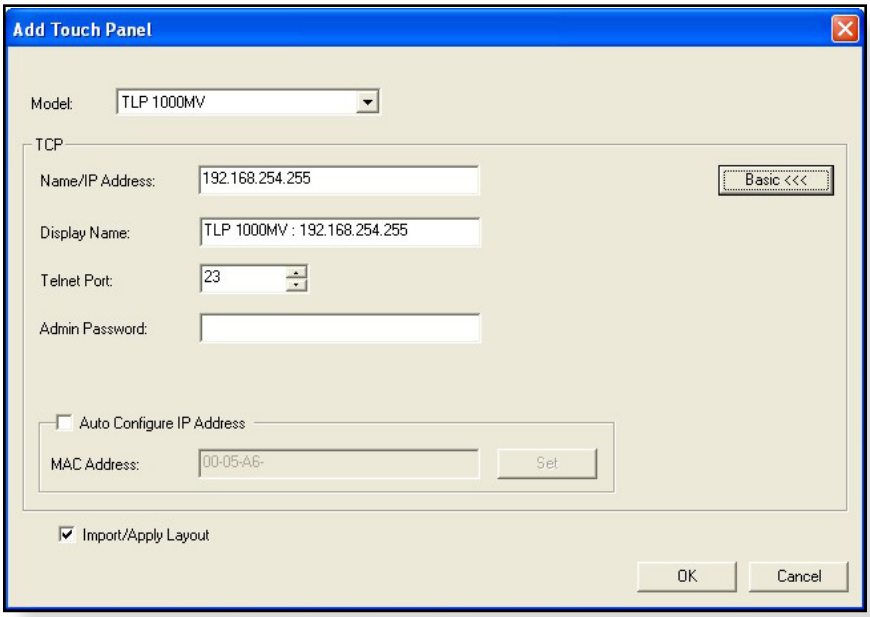


Figure 39. Add TouchPanel Dialog Box

7. Select the settings to add a touchpanel.
   a. Ensure the TouchLink panel model is selected from the drop-down menu and enter the IP address.
   b. Set the Telnet port (usually 23) and, if necessary, enter the password.
   c. Check the **`Import/Apply Layout`** box and click **`OK`**.

The window now shows the GUI from the TouchLink panel.

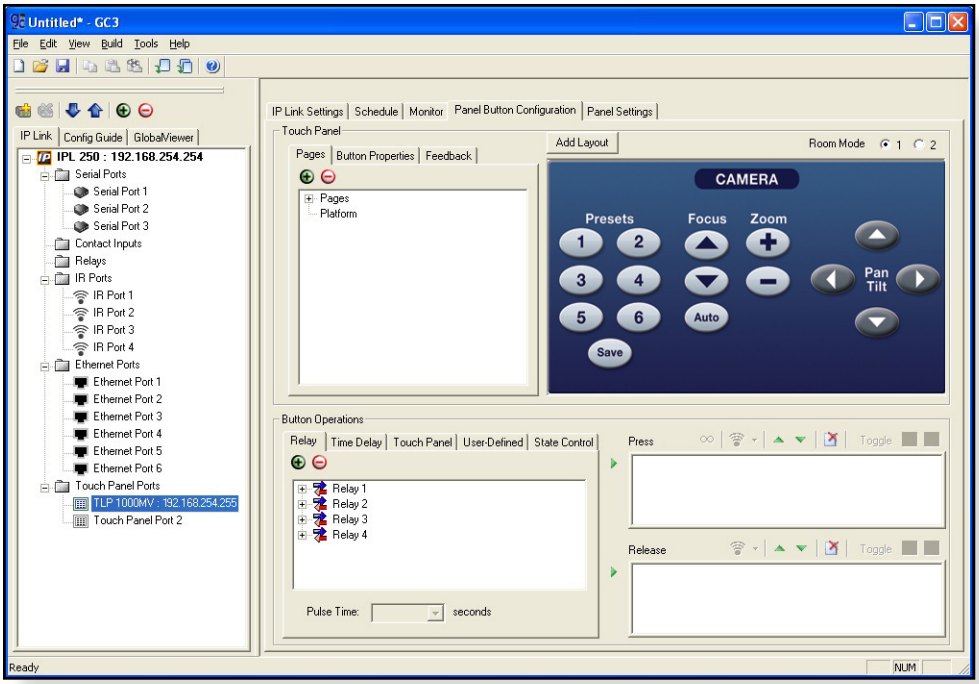


Figure 40. Touchpanel GUI Loaded Onto Global Configurator 3

8. Use Global Configurator to associate functions with the screen elements designed in GUI Configurator (see the Global Configurator help file).

Specifications

TLP 1000MV

Display

Screen type	Active matrix TFT color display
Size	10.1" (25.7 cm), measured diagonally
Resolution	1024x600
Dot/pixel pitch	118 dpi
Aspect ratio	Widescreen
Color depth	18 bit, 256k colors
Transparency	8 bit alpha channel
Brightness	200 nits (cd/m^2)
Contrast	500:1
Backlight	High bright LED
Viewing angle	±70° horizontal, +50°/-60° vertical
Touch screen	Resistive membrane

Memory

SDRAM	128 MB for graphics processing 8 MB for system use
Flash	32 MB for project storage 16 MB for system use

Control — Ethernet interface

Ethernet control/communications port	1 RJ-45 female connector
Ethernet data rate	10/100Base-T, half/full duplex with autodetect
Ethernet protocol	ICMP, IP, TCP (control), UDP, DHCP, Telnet
Default settings	Link speed and duplex level: autodetected IP address = 192.168.254.254 Subnet mask = 255.255.0.0 Default gateway = 0.0.0.0 DHCP = off
Program control	Extron Global Configurator v3.1 or higher GUI Configurator v1.2 or higher for Windows® Extron Simple Instruction Set (SIS™) Microsoft® Internet Explorer® ver. 6 or higher, Telnet

Control — touchpanel

Motion sensor	On/off
Light sensor	On/off

Video input — see S-video or composite video MTP transmitters' specifications

Number/signal type	1 proprietary analog signal from an Extron MTP AV transmitter
Connectors	1 female RJ-45
Standards	NTSC, PAL

Audio input — see S-video or composite video MTP transmitters' specifications

Number/signal type	1 stereo, balanced/unbalanced, line level, as part of a set of proprietary signals from an Extron MTP
Connector	1 female RJ-45 (shared with video input)

Audio output

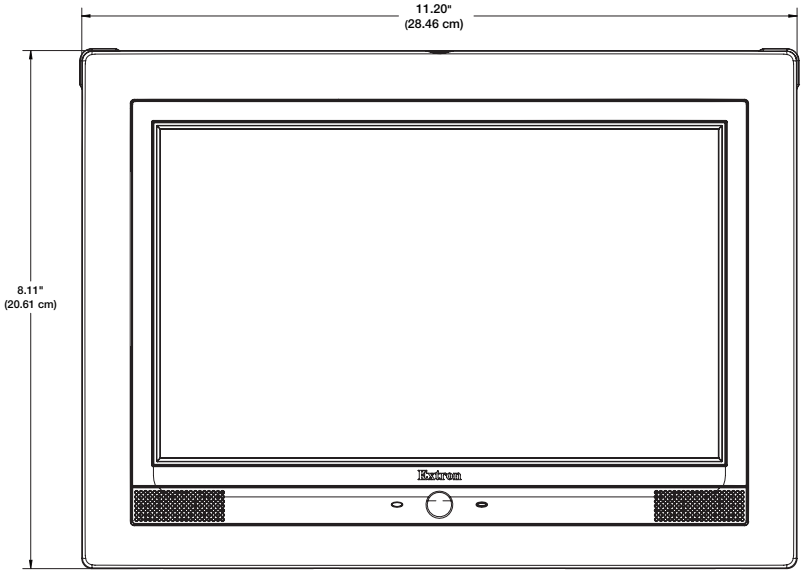
Speaker output	2 mono, 86 dB SPL, 0.1 watt, 0.1 m, half space
Frequency response	750 Hz to 20 kHz, ±5 dB
Playback format(s)	WAV files: 8 bit PCM, mono, 8 kHz sampling

General

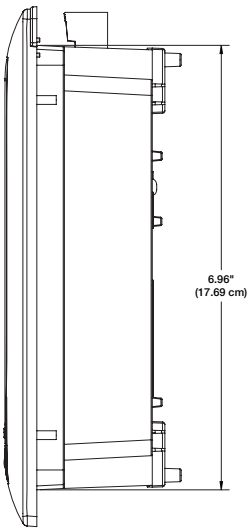
Power	Supplied by an included power over Ethernet (PoE) adapter or by an optional external 12 VDC, 1 A power supply
Power supply	External Input: 100-240 VAC, 50-60 Hz Output: PoE 802.3af compliant, 48 VDC, 0.35 A, 16.8 watts
Power consumption	
Device	12.7 watts, 48 VDC (PoE)
Device and power supply	15.3 watts, 100-240 VAC, 50-60 Hz
Power over Ethernet (PoE) input requirements	Complies with PoE 802.3af, class 3
Temperature/humidity	Storage: -4 to +140 °F (-20 to +60 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling	Convection, vents on top and bottom
Thermal dissipation	
Device	43.5 BTU/hr
Device and power supply	52.3 BTU/hr
Mounting	
Rack mount	With optional kit
Furniture or wall mount	With included hardware or optional accessores
Enclosure type	Plastic

Enclosure dimensions

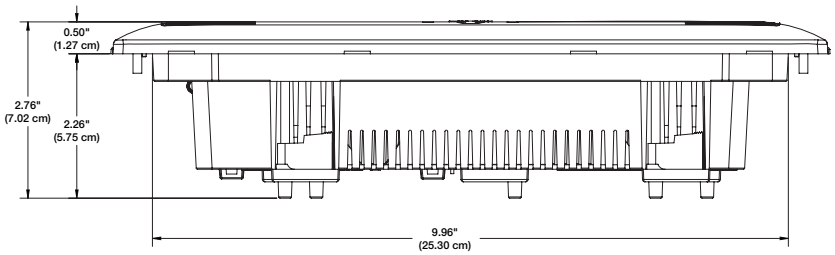
Faceplate	8.1" H x 11.2" W x 0.5" D (20.6 cm H x 28.5 cm W x 1.3 cm D)
Enclosure	Excluding mounting flange: 7.0" H x 10.0" W x 2.3" D* (17.7 cm H x 25.3 cm W x 5.8 cm D*) *In-wall depth: 2.3" (5.8 cm) (Allow at least 2.75" [7.0 cm] depth in the wall/furniture.)



FRONT VIEW



SIDE VIEW



BOTTOM VIEW

Product weight	2.7 lbs (1.2 kg)
Shipping weight	6 lbs (3 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	
Safety	CE, c-UL, UL
EMI/EMC	CE, C-tick,FCC Class A, ICES, VCCI
Environmental	Complies with the applicable requirements of RoHS and WEEE.
MTBF	30,000 hours
Warranty	3 years parts and labor; touchscreen display and overlay components are covered for 1 year

NOTE: All nominal levels are at ±10%.

NOTE: Specifications are subject to change without notice.

TLP 1000TV

Display

Screen type	Active matrix TFT color display
Size	10.1" (25.7 cm), measured diagonally
Resolution	1024x600
Dot/pixel pitch	118 dpi
Aspect ratio	Widescreen
Color depth	18 bit, 256k colors
Transparency	8 bit alpha channel
Brightness	200 nits (cd/m^2)
Contrast	500:1
Backlight	High bright LED
Viewing angle	±70° horizontal, +50°/-60° vertical
Touch screen	Resistive membrane

Memory

SDRAM	128 MB for graphics processing 8 MB for system use
Flash	32 MB for project storage 16 MB for system use

Control — Ethernet interface

Ethernet control/communications port	1 female RJ-45 connector
Ethernet data rate	10/100Base-T, half/full duplex with autodetect
Ethernet protocol	ICMP, IP, TCP (control), UDP, DHCP, Telnet
Default settings	Link speed and duplex level: autodetected IP address = 192.168.254.254 Subnet mask = 255.255.0.0 Default gateway = 0.0.0.0 DHCP = off
Program control	Extron Global Configurator v3.1 or higher GUI Configurator v1.2 or higher for Windows® Extron Simple Instruction Set (SIS™) Microsoft® Internet Explorer® ver. 6 or higher, Telnet

Control — touchpanel

Motion sensor	On/off
Light sensor	On/off

Video input — see S-video or composite video MTP transmitters' specifications

Number/signal type	1 proprietary analog signal from an Extron MTP AV transmitter
Connectors	1 female RJ-45
Standards	NTSC, PAL

Audio input — see S-video or composite video MTP transmitters' specifications

Number/signal type	1 stereo, balanced/unbalanced, line level, as part of a set of proprietary signals from an Extron MTP
Connector	1 female RJ-45 (shared with video input)

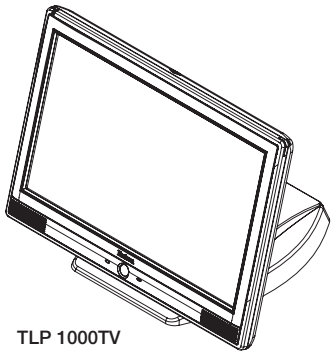
Audio output

Speaker output	2 mono, 86 dB SPL, 0.1 watt, 0.1 m, half space
Frequency response	750 Hz to 20 kHz, ±5 dB
Playback format(s)	WAV files: 8 bit PCM, mono, 8 kHz sampling

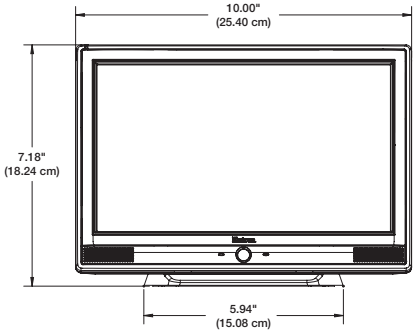
General

Power	Supplied by an included power over Ethernet (PoE) adapter or by an optional external 12 VDC, 1 A power supply
Power supply	External Input: 100-240 VAC, 50-60 Hz Output: PoE 802.3af compliant, 48 VDC, 0.35 A, 16.8 watts
Power consumption	
Device	12.7 watts, 48 VDC (PoE)
Device and power supply	15.3 watts, 100-240 VAC, 50-60 Hz
Power over Ethernet (PoE) input requirements	Complies with PoE 802.3af, class 3
Temperature/humidity	Storage: -4 to +140 °F (-20 to +60 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling	Convection, vents on top rear
Thermal dissipation	
Device	43.5 BTU/hr
Device and power supply	52.3 BTU/hr
Mounting	
Furniture or wall mount	Set on tabletop or mount to optional VESA D 75 mm panel mount kit
Adjustment ranges	Tilts through a 45° range
Enclosure type	Plastic

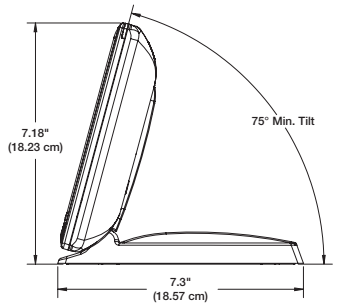
Enclosure dimensions ..... 7.2" H x 10.0" W x 7.3" D
(18.2 cm H x 25.4 cm W x 18.6 cm D)
(Includes base. Total height depends on screen tilt. See the following diagrams.)



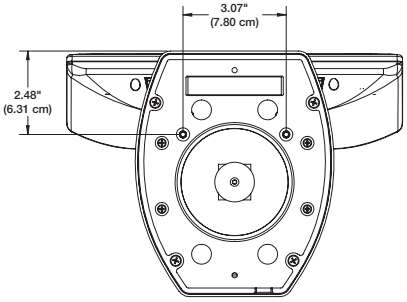
TLP 1000TV



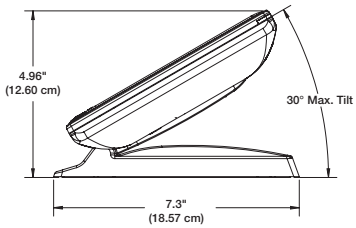
FRONT VIEW



SIDE VIEW



BOTTOM VIEW



SIDE VIEW

Product weight..... 5.2 lbs (2.4 kg)
Shipping weight..... 8 lbs (4 kg)
Vibration..... ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance
- Safety..... CE, c-UL, UL
- EMI/EMC..... CE, C-tick, FCC Class A, ICES, VCCI
- Environmental..... Complies with the applicable requirements of RoHS and WEEE.

MTBF..... 30,000 hours
Warranty..... 3 years parts and labor; touchscreen display and overlay components are covered for 1 year

NOTE: All nominal levels are at ±10%.

NOTE: Specifications are subject to change without notice.

Accessories and Part Numbers

Included Parts

Description	Part Number
TLP 1000MV TouchLink panel (wall mount, black)	60-1105-02
TLP 1000MV TouchLink panel (wall mount, white)	60-1105-03
TLP 1000TV TouchLink panel (desk top or VESA mount)	60-1104-02
Power over Ethernet power supply	70-828-01
Extron removal tool	
Extron Software Products DVD	
Cut-out Template (TLP 1000MV only)	
TLP 1000MV Setup Guide or TLP 1000TV Setup Guide	

Optional Parts

Description	Part Number
RM 1000M rack mounting kit for TLP 1000MV	70-886-01
BB 1000M back box for TLP 1000MV	70-887-01
EWB 1000 external wall box for TLP 1000MV (black)	70-950-02
EWB 1000 external wall box for TLP 1000MV (white)	70-950-03
LPVM-1 VESA mounting kit for TLP 1000TV	60-1099-02
SMA-1 swivel mount adapter for TLP 1000TV	70-747-01
#6 Spanner head screwdriver	100-710-01LF
PS 1210 C 12 VDC, 1.0 A desktop power supply with captive screw connector	70-775-01
IPL T S1 IP Link Control Processor	60-801-81
IPL T S2 IP Link Control Processor	60-544-81
IPL T S4 IP Link Control Processor	60-544-83
IPL T S6 IP Link Control Processor	60-544-84
IPL 250 IP Link Control Processor	60-1026-81
IPL T CR48 IP Link Control Processor	60-544-85
IPL T SFI244 IP Link Control Processor	60-544-86
IPCP 305 IP Link Control Processor	60-1072-02
IPCP 505 IP Link Control Processor	60-1071-02

Mounting

This section outlines the various options for:

- **Rack Mounting the TLP 1000MV**
- **Wall Mounting the TLP 1000MV**
- **Surface Mounting the TLP 1000MV**
- **Wall Mounting the TLP 1000MV with a Wallbox**
- **Desktop Mounting the TLP 1000TV**
- **Removing the TLP 1000TV base for VESA Mounting**
- **VESA mounting the TLP 1000TV**

Rack Mounting the TLP 1000MV

Underwriters Laboratories Guidelines for Rack Mounting

The following Underwriters Laboratories (UL) guidelines are relevant to the safe installation of these products in a rack:

Elevated operating ambient temperature — If the unit is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install the equipment in an environment compatible with the maximum ambient temperature (Tma: +122 °F, +50 °C) specified by Extron.

Reduced air flow — Install the equipment in the rack so that the equipment gets adequate air flow for safe operation.

Mechanical loading — Mount the equipment in the rack so that uneven mechanical loading does not create a hazardous condition.

Circuit overloading — Connect the equipment to the supply circuit and consider the effect that circuit overloading might have on overcurrent protection and supply wiring. Give appropriate consideration to the equipment nameplate ratings when addressing this concern.

Reliable earthing (grounding) — Maintain reliable grounding of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (such as the use of power strips).

Rack Mounting the TLP 1000MV

The TLP 1000MV can be mounted in any standard 19-inch equipment rack, using the optional Extron RM 1000M rack mounting kit (part number **70-886-01**). Follow the instructions provided with the kit.

Wall Mounting the TLP 1000MV

The TLP 1000MV can be mounted in the wall or through furniture.

To mount the TLP 1000MV directly into a wall, follow these steps.

1. Determine the best location for the TLP 1000MV.
2. Use the template provided to mark the wall and then cut a hole 10.22 inches (25.96 cm) wide x 7.16 inches (18.2 cm) high.
3. Unpack the TLP 1000MV and remove the faceplate.
4. Ensure all the locking arms are flush with the unit and check that the TLP 1000MV can fit into the hole. If necessary, use a rasp or a coarse file to enlarge the hole.
5. Run the network cable and video connectors inside the wall to the hole, leaving enough slack in the cables to connect them to the back of the TLP 1000MV.
6. Plug the cables into the **rear panel connectors** (see pages 6 - 8).
   - Connect the **LAN port** to the network with a straight-through cable, providing both a network connection and power from a Power over Ethernet power supply.
   - Connect an **S-video or composite video** source to the RJ-45 MTP input.
   - **Optional:** Extron recommends using the Power over Ethernet power supply provided. However, you may use the LAN port only as a network connection and connect a 12 VDC, 1.0 A power supply (not provided) to the 2-pole captive screw **power input**. See the **cautions** on page 7 for very important information about power supplies.
7. Push excess cables into the wall cavity.
8. Ensure the five locking arms (three at the top and two at the bottom) are flush with top and bottom of the TLP 1000MV and fit the touchpanel into the hole.
9. Using a Phillips head screwdriver, tighten the screws for the locking arms. As the screws tighten, the locking arms rotate behind the wall and hold the unit in place. Do not overtighten the screws as this can damage the locking arms or the wall.

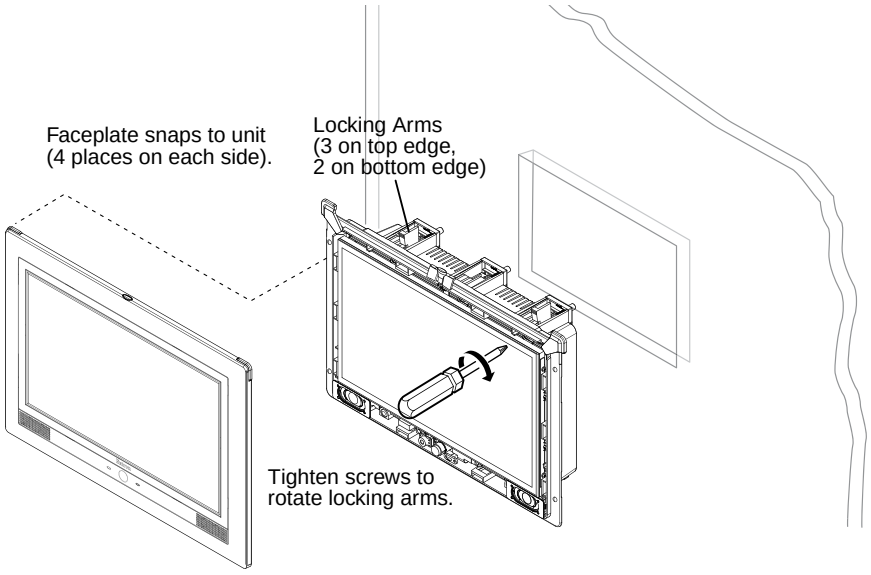


Figure 41. Securing the TLP 1000MV to a Wall with Locking Arms

10. If required, perform the **initial calibration** (see page 14).
11. Replace the faceplate by pressing the catches on the faceplate into the corresponding holes on the front of the panel (four places on each side).

Furniture Mounting the TLP 1000MV

The TLP 1000MV can be mounted into the surface of a lectern as follows.

1. Determine the best location for the TLP 1000MV.
2. Use the template provided to mark the lectern and then cut a hole 10.22 inches (25.96 cm) wide x 7.16 inches (18.2 cm) high.
3. Unpack the TLP 1000MV and remove the faceplate.
4. Ensure all the locking arms are flush with the unit and check that the TLP 1000MV can fit into the hole. If necessary, use a rasp or a coarse file to enlarge the hole.
5. With the TLP 1000MV in position, mark four holes for screws, where the unit will be secured to the lectern.
6. Remove the TLP 1000MV and, if necessary, drill four pilot holes into the lectern.
7. Run the network cable and video connectors to the lectern, leaving enough slack to connect them to the back of the TLP 1000MV.
8. Plug the cables into the **rear panel connectors** (see pages 6 - 8).
   - Connect the **LAN port** to the network with a straight-through cable, providing both a network connection and power from a Power over Ethernet power supply.
   - Connect an S-video or composite video source to the **RJ-45 MTP input**.
   - **Optional:** Extron recommends using the Power over Ethernet power supply provided. However, you may use the LAN port only as a network connection and connect a 12 VDC, 1.0 A power supply (not provided) to the 2-pole captive screw **power input**. See the **cautions** on page 7 for very important information about power supplies.
9. Push excess cables into the lectern.
10. Ensure the five locking arms (three at the top and two at the bottom) are flush with top and bottom of the TLP 1000MV, and then fit the touchpanel into the hole.
11. Secure the touchpanel to the lectern with four #4 screws (not provided), using the pilot holes drilled in step **6**.
12. Replace the faceplate by pressing the catches on the faceplate into the corresponding holes on the front of the panel (four places on each side).

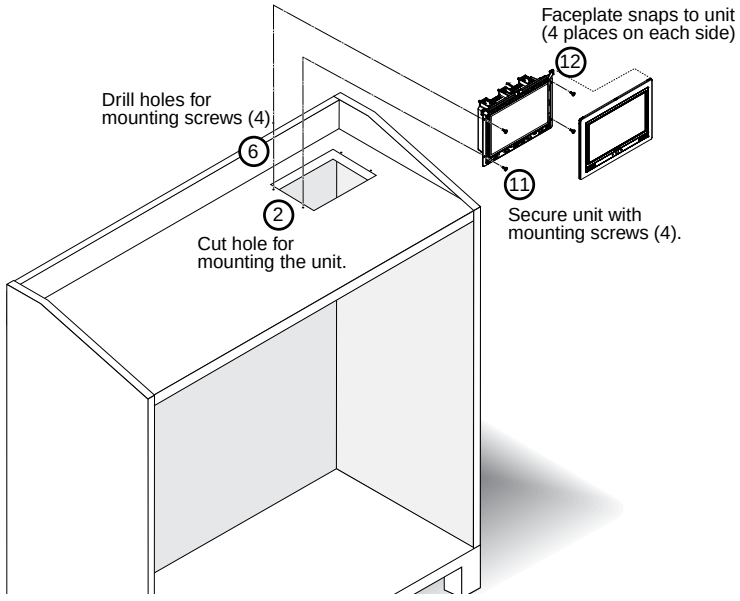


Figure 42. Mounting the TLP 1000MV in a Lectern

Wall Mounting the TLP 1000MV with a Wall Box

The TLP 1000MV can be wall mounted using the Extron BB 1000M back box (part number **70-887-01**) or the Extron EWB 1000M external wall box (part number **70-950-0*x***). Follow the instructions provided with the appropriate wall box.

Desktop Mounting the TLP 1000TV

Freestanding

The TLP 1000TV comes assembled with a stand that allows it to be placed on a desktop. If required, use two screws through the two holes in the base to secure the unit to the desktop.

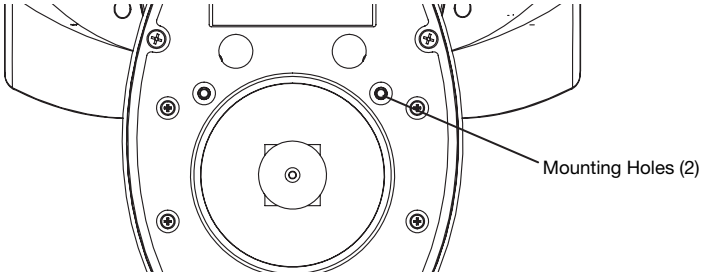


Figure 43. TLP 1000TV Base, Showing Mounting Holes

1. Drill two holes through the desktop from underneath. The two holes must be 3.07 inches (78 mm) apart.
2. Fasten the base to the desktop with two #8 wood screws through the desktop from underneath into the two holes in the base.

Swivel Mount Adapter

The TLP 1000TV can be mounted with the Extron SMA-1 swivel mount adapter. This allows the unit to be mounted permanently yet swivel up to 180° in either direction.

1. Remove the back cover and base cover, using the Extron removal tool, as described in "**Removing the TLP 1000TV Base for VESA Mounting**" on the next page.
2. Set the TLP 1000TV on its back on a flat surface and remove the screw holding the locking plate at the bottom of the base. This releases the weight, which can be removed, leaving the mounting hole that will fit over the conduit of the SMA-1.

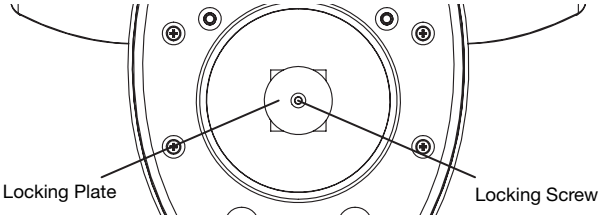


Figure 44. TLP 1000TV Base, Showing Locking Plate and Screw

3. Attach the conduit, insulation disk, and swivel disk and configure the set screws to allow for the degree of swivel that is required (see the *SMA-1 Swivel Mount Adapter Kit User Guide*, available at **www.extron.com**).
4. Place the mounting hole in the base over the conduit of the SMA-1.
5. Secure the touchpanel to the SMA-1 with the backing plate and locking nut (see the *SMA-1 Swivel Mount Adapter Kit User Guide*).

Removing the TLP 1000TV Base for VESA Mounting

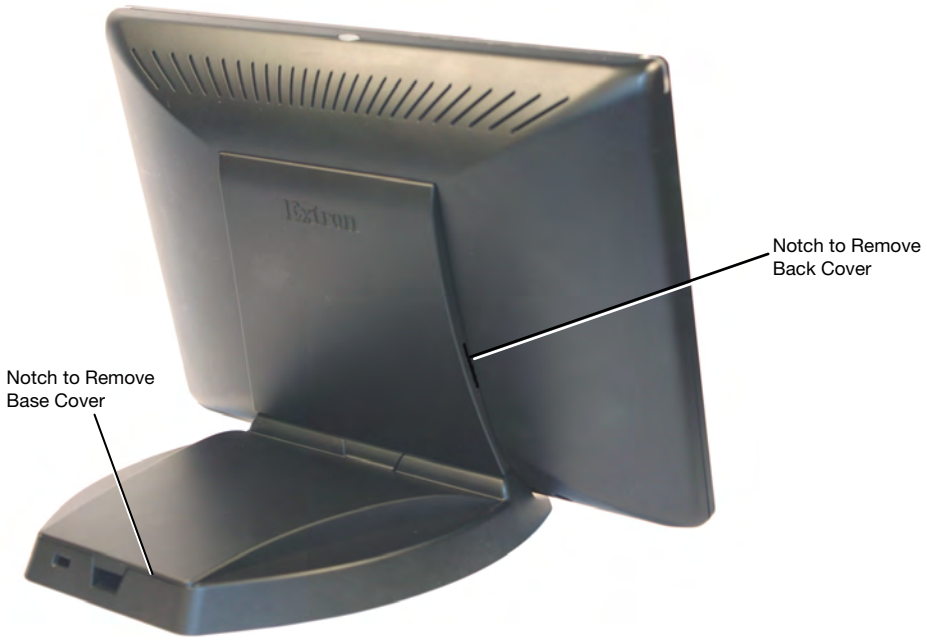


Figure 45. Removing the Back and Base Covers

1. Remove the back cover by inserting the Extron removal tool (provided) into the notches on each side.
2. Remove the base cover by inserting the Extron removal tool into the notches on the base.

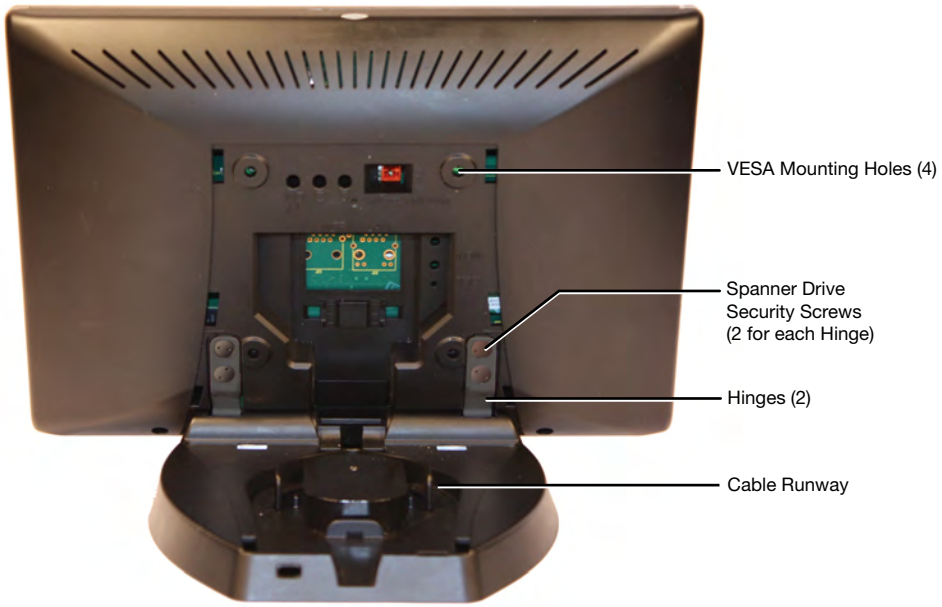


Figure 46. TLP 1000TV with the Base and Back Covers Removed

3. If necessary, cut the zip tie holding the twisted pair cables to the TLP 1000TV base.
4. If necessary, remove the cables from the cable runway in the base.
5. Remove the four screws holding the hinges to the touchpanel.

> **NOTE:** The spanner drive screws holding the hinges require a #6 spanner bit or #6 spanner head screwdriver, which are not provided.

VESA Mounting the TLP 1000TV

1. Before attaching the VESA mounting kit, remove the base and back of the TLP 1000TV, as described in the **previous section**.
2. If necessary, connect the cables and fasten them to the back of the touchpanel with zip ties.
3. Attach the small back cover (provided). Fit the bottom catches into the slots on the bottom of the panel and snap the side catches into place.
4. Once the base and back have been removed,VESA mount the TLP 1000TV by securing plate 2 of the Extron LPVM-1 (part number **60-1099-02**) to the four VESA mounting holes (see the figure below). Follow the instructions provided with the mounting kit.

Figure 47. VESA Mounting the TLP 1000TV with the LPVM-1

Reset Modes

The TLP 1000MV and TLP 1000TV have four reset modes that correspond to four of the five reset modes for the IP Link controllers. The modes are initiated by pressing the Reset button.

To access the Reset button on the TLP 1000MV, remove the faceplate. See page 5 to locate the **Reset button on the TLP 1000MV**. The Reset button on the TLP 1000TV is on the back panel (see page 10).

TLP 1000MV and TLP 1000TV Reset Mode Summary

	Mode	Activation	Result	Purpose/Notes
Use Factory Firmware	**1**	Hold down the recessed Reset button while applying power to the TLP 1000. **NOTE:** After a mode 1 reset is performed, update the TLP 1000 firmware to the latest version. Do not operate the firmware version that results from this mode reset. If you want to use the factory default firmware, you must upload that version again. See page 21 for details on uploading firmware.	**The TLP 1000 reverts to the factory default firmware.** Event scripting does not start if the TLP 1000 is powered on in this mode. All user files and settings (drivers, adjustments, IP settings, etc.) are maintained. **NOTE:** If you do not want to update firmware, or you performed a mode 1 reset by mistake, cycle power to the TLP 1000 to return to the firmware version that was running prior to the mode 1 reset. Use the 0Q SIS command to confirm that the factory default firmware is no longer running (look for asterisks following the version number).	This mode reverts to the factory default firmware version if incompatibility issues arise with user-loaded firmware. **NOTE:** User-defined web pages may not work correctly if using an earlier firmware version.
Run/Stop Events	**3**	Hold down the Reset button for about 3 seconds until the Reset LED blinks once, then release and press Reset momentarily (<1 second) within 1 second.	**This mode turns events on or off.** **NOTE:** Nothing happens if the momentary press does not occur within 1 second.	This mode is useful for troubleshooting.
Reset all IP Settings	**4**	Hold down the Reset button for about 6 seconds until the Reset LED blinks twice (once at 3 seconds, again at 6 seconds). Then release and press Reset momentarily (for <1 second) within 1 second. **NOTE:** Nothing happens if the momentary press does not occur within 1 second.	**This mode:** • Enables ARP capability. • Sets the IP address back to factory default (192.168.254.254). • Sets the subnet back to factory default. • Sets the default gateway address to the factory default. • Sets port mapping back to factory default. • Turns DHCP off. • Turns events off.	This mode enables you to set IP address information using ARP and the MAC address.
Reset to Factory Defaults	**5**	Hold down the Reset button for about 9 seconds until the Reset LED blinks three times (once at 3 seconds, again at 6 seconds, again at 9 seconds). Then release and press Reset momentarily (for <1 second) within 1 second. **NOTE:** Nothing happens if the momentary press does not occur within 1 second.	**This mode performs a complete reset to factory defaults (except the firmware).** • Does everything mode 4 does. • Removes button/touchpanel configurations. • Resets all IP options. • Removes scheduling settings. • Removes/clears all files from TLP 1000.	This mode is useful if you want to start over with configuration and uploading, and also to replace events.

Extron Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase; touchscreen display and overlay components are covered for 1 year. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:
Extron Electronics
1001 East Ball Road
Anaheim, CA 92805
U.S.A.

Japan:
Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe, Africa, and the Middle East:
Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:
Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Asia:
Extron Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Middle East:
Extron Middle East
Dubai Airport Free Zone
F12, PO Box 293666
United Arab Emirates, Dubai

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or if modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: (714) 491-1500 **Europe**: 31.33.453.4040
Asia: 65.6383.4400 **Japan**: 81.3.3511.7655

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

Extron USA - West Headquarters	Extron USA - East	Extron Europe	Extron Asia	Extron Japan	Extron China	Extron Middle East	Extron Korea	Extron India
+800.633.9876 Inside USA/Canada Only	+800.633.9876 Inside USA/Canada Only	+800.3987.6673 Inside Europe Only	+800.7339.8766 Inside Asia Only	+81.3.3511.7655	+4000.EXTRON +4000.398766 Inside China Only			1800.3070.3777 Inside India Only
+1.714.491.1500 FAX: +1.714.491.1517	+1.919.863.1794 FAX: +1.919.863.1797	+31.33.453.4040 FAX: +31.33.453.4050	+65.6383.4400 FAX: +65.6383.4664	FAX: +81.3.3511.7656	+86.21.3760.1568 FAX: +86.21.3760.1566	+971.4.2991800 FAX: +971.4.2991880	+82.2.3444.1571 FAX: +82.2.3444.1575	+91-80-3055.3777 FAX: +91 80 3055 3737

© 2011 Extron Electronics All rights reserved. www.extron.com